

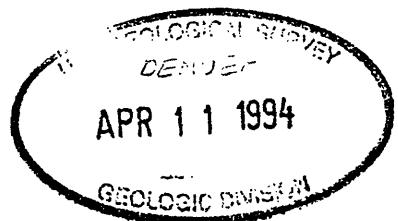
U.S. DEPARTMENT OF THE INTERIOR
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Analyses of rocks and stream sediment from the Special Mining
Management Zone—Clear Creek, Lemhi County, Idaho

by

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Open-File Report
93-708A Discussion (paper copy)
93-708B Geochemical data files
(1) 3.5" 1.44 MB diskette



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CONTENTS: 50 pages, 1 oversize sheet (i.e. larger than 8 1/2 by 14 inches) 1 - 3 1/2 "disk

Map Scale: 1:50,000

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STUDIES RELATED TO WILDERNESS

Under the provisions of the Wilderness Act (Public Law 88-577, September 3, 1964) and related acts, the U.S. Geological Survey and the U.S. Bureau of Mines conducted mineral surveys of wilderness and primitive areas. The act directs that the results of such surveys are to be made available to the public and be submitted to the President and the Congress. This report presents the results of a geochemical survey of the Special Mining Management Zone—Clear Creek in the Salmon National Forest, Lemhi County, Idaho. The area was included in the River of No Return Wilderness by Public Law 96-312, July 23, 1980.

INTRODUCTION

The Special Mining Management Zone—Clear Creek (SMMZCC) covers 39,000 acres in the Salmon River Mountains, 24 mi west of Salmon, Idaho, and 6 mi northwest of the Blackbird Mine (fig. 1; plate 1). The area has rugged topography characterized by alpine ridges on the southwest side and deeply incised canyons of Panther Creek and the Salmon River on the east and north sides. Maximum relief is 6,289 ft across a distance of 5.6 mi from Dome Mountain to the mouth of the Middle Fork of the Salmon River.

The geochemical evaluation of the SMMZCC consisted of the analysis of 150 rocks and 89 stream-sediment samples collected in and adjacent to the study area. Noranda Exploration kindly provided fractions of some stream sediments collected during their exploration program, both within the study area and in the area between the Blackbird (Co-Cu-Au) Mine and the SMMZCC. Their samples clearly reflect the long-known cobalt deposits in the region south of the SMMZCC (Vhay, 1948; Bennett, 1977) and generally agree with our own data from samples within the study area. Therefore we include our analyses of their samples in order to provide a more complete data set. Lund and others (1983) mapped the geology and evaluated the mineral resource potential of the study area. Geochemical sampling was carried out by field parties of the U.S. Geological Survey, including K.V. Evans, K.I. Lund, H.J. Brandenberger, F.D. Henderson, and E.C. Secor.

SAMPLE PREPARATION

Rock samples were crushed and pulverized to less than 100-mesh (0.15 mm) using a vertical pulverizer with ceramic plates.

Stream-sediment samples consisted of about one liter of sediment screened in the field to less than 10 mesh (1.0 mm) at each sample site. This material was air dried and sieved in the laboratory. The less than 170-mesh (0.090 mm) fraction was analyzed without further preparation; hereafter it will be referred to as the "fine" fraction. (The bulk fine fraction provided by Noranda was less than 80-mesh (0.18 mm) rather than the 170-mesh used by the USGS team.) The greater than 170-mesh but less than 35-mesh (0.5 mm) fraction was further processed with a Wilfley concentrating table to obtain a heavy-mineral concentrate. The less dense material was discarded. A hand magnet was used to remove ferromagnetic minerals from the concentrate and the nonmagnetic portion was then analyzed.

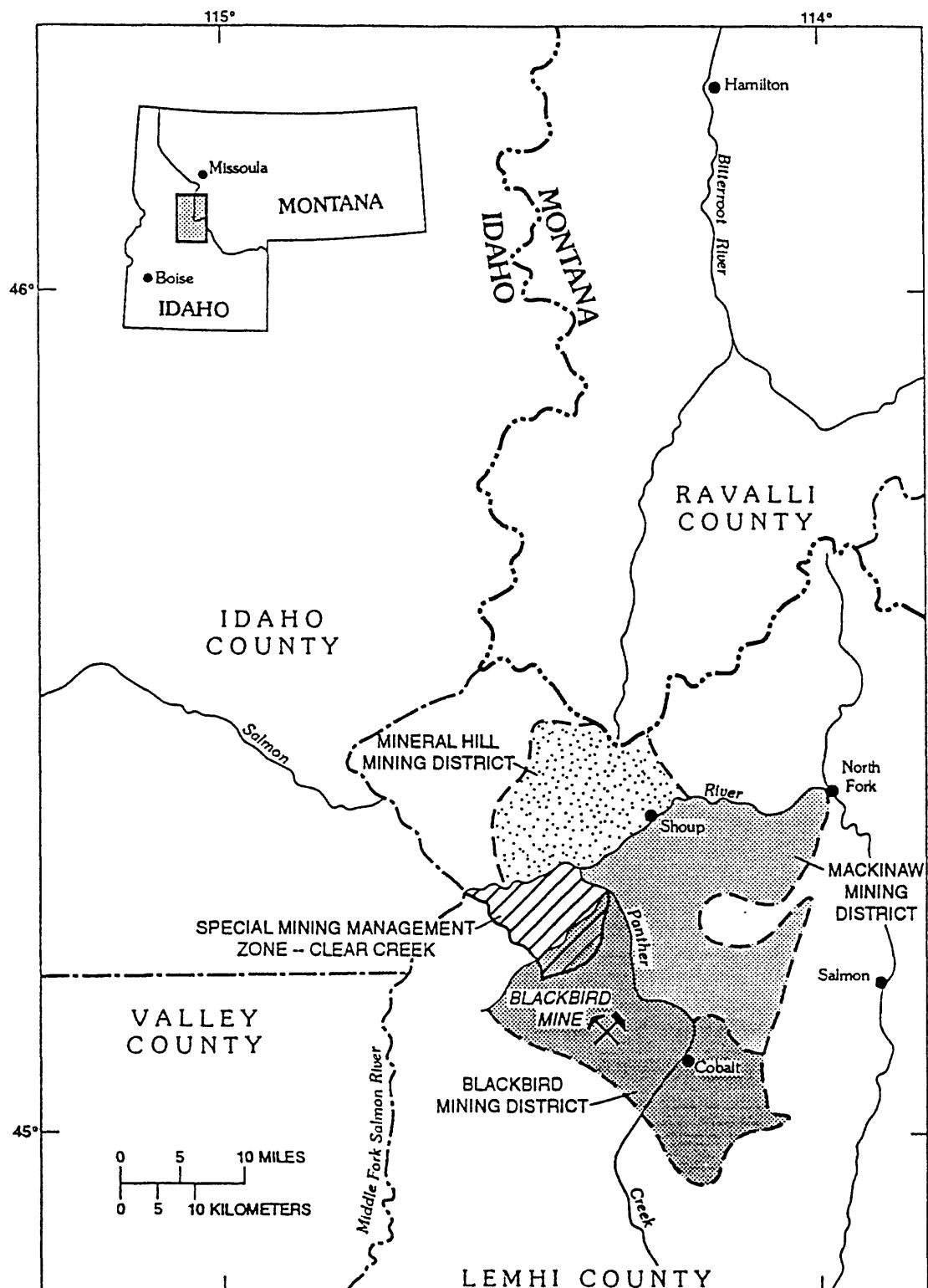


Figure 1. Index map showing location of the Special Mining Management Zone—Clear Creek, Lemhi County, Idaho.

ANALYTICAL PROCEDURES

Each sample was analyzed semiquantitatively for 31 elements by a six-step direct-current arc emission spectrographic method (Grimes and Marranzino, 1968). In addition, 106 rock samples were analyzed quantitatively for Zn, Cd, Bi, Sb, As, and Au using the atomic absorption spectrometric method (Aruscavage and Crock, 1987). All analyses were performed at the Denver facilities of the U.S. Geological Survey.

The semiquantitative spectrographic values are reported as six steps per order of magnitude (1, 0.7, 0.5, 0.3, 0.2, 0.15, or multiples of ten of these numbers) and are approximate geometric midpoints of the concentration ranges. Due to the high concentration of iron, titanium, and zirconium in the heavy-mineral concentrate, the analytical procedure was modified from that of Grimes and Marranzino (1968). Each sample was diluted to half of its original concentration by the addition of pure SiO₂, thereby reducing spectral interferences. Consequently, the lower detection limits for each element were doubled. Precision using the emission spectrographic method generally exceeds the 83 percent and 96 percent frequency values for plus or minus one and two adjoining reporting intervals of the mean value (Motooka and Grimes, 1976). Roy T. Hopkins, Jr., and Stephen J. Sutley performed the emission spectrographic analyses.

Quantitative data for six elements were determined for some of the samples by the atomic absorption method. Aruscavage and Crock (1987) provide a brief description of this widely used analytical method. Precision is in the 1 to 10 percent relative standard deviation range. Robert Fairfield and Theodore A. Roemer performed the atomic absorption analyses.

EXPLANATION OF DATA TABLES

Data are provided on a 1.44 MB diskette for easy import into most commonly used spreadsheet software. Five spreadsheets contain the following data: SMMZ1., stream sediments (nonmagnetic concentrates); SMMZ2., stream sediments, fines (splits of Noranda's samples); SMMZ3., rock samples; SMMZ4., rock samples; and SMMZ5., stream sediments, fines. Suffixes to these files indicate the spreadsheets with which these files may be used. Suffix .XLS indicates an Excel version 4.0 file (e.g. SMMZ1.XLS); suffix .WK1 indicates a Lotus 1-2-3 file; and suffix .TXT indicates a tab-delimited ASCII file. (Files with the suffix .FMT are necessary for importing the .WK1 files into Lotus 1-2-3 but are not accessed directly.) The data may be imported to the Apple Macintosh through Excel 4.0. README.TXT is a copy of this text.

Data are all given in parts per million (ppm) except where noted with a percent sign (%). The letter S preceding an element (e.g., S-Co) indicates analysis by the emission spectrographic method, whereas the letters AA preceding an element (e.g., AA-As) indicate analysis by the atomic absorption method. Detection limits for each element are given in parentheses above the element. Code N signifies that the element was not detected at the limits of detection (e.g., N 20); code H signifies that a value was measured, but interference from other elements may have affected the value assigned to the given element (e.g., H 8). Symbols "<" and ">" indicate less than and greater than, respectively.

SAMPLE NUMBER SYSTEM

Example—1SB001A

The first number indicates the year sampling was conducted (1 = 1981; 2 = 1982). The second and third characters (SB) indicate this study area. The fourth through sixth characters are the sample location number; note that numbers such as 1SB001 and 2SB001 are two different sample locations. Samples provided by Noranda all have numbers between 2SB601 and 2SB664. Suffixes (eighth and ninth characters) indicate the sample type:

A, B, C, D, E, — rock samples.

A1 and A2 — replicate rock samples.

SF — stream sediment, fine fraction (-170 mesh for USGS samples; -80 mesh for Noranda's samples).

SN — stream sediment, nonmagnetic fraction of heavy-mineral concentrate.

TF, TN — replicate stream sediment, fine and nonmagnetic fractions, respectively.

REFERENCES CITED

- Aruscavage, P.J., and Crock, J.G., 1987, Atomic absorption methods, in Baedecker, P.A., ed., Methods for geochemical analysis: U.S. Geological Survey Bulletin 1770, p. C1-C6.
- Bennett, E.H., 1977, Reconnaissance geology and geochemistry of the Blackbird Mountain-Panther Creek region, Lemhi County, Idaho: Idaho Bureau of Mines and Geology Pamphlet 167, 108 p.
- Grimes, D.J., and Marranzino, A.P., 1968, Direct-current arc and alternating-current spark emission spectrographic field methods for the semiquantitative analyses of geologic materials: U.S. Geological Survey Circular 591, 6 p.
- Lund, K., Evans, K.V., and Esparza, L.E., 1983, Mineral resource potential map of the Special Mining Management Zone—Clear Creek, Lemhi County, Idaho: U.S. Geological Survey Miscellaneous Field Studies Map MF-1576-A, scale 1:50,000.
- Motoooka, J.M., and Grimes, D.J., 1976, Analytical precision of one-sixth order semiquantitative spectrographic analyses: U.S. Geological Survey Circular 738, 25 p.
- Vhay, J.S., 1948, Cobalt-copper deposits of the Blackbird district, Lemhi County, Idaho: U.S. Geological Survey Strategic Minerals Investigation Preliminary Report 3-219, 26 p.

Table 1. File SMMZ1.

Field Number	Lab Number	Latitude ddmmss...h	Longitude ddmmss...h	Latitude	Longitude	(0.1) S-Mg%	(0.05) S-Mg%	(0.1) S-Cat ^b
1SB001SN	LGB609	451705000N	1142715000W	45.284721	114.45416	0.20	0.05	0.70
1SB002SN	LGB601	451710000N	1142716000W	45.28611	114.45444	0.20	0.10	10.00
1SB005SN	LGB621	451810000N	1143219000W	45.302776	114.53861	0.30	0.15	15.00
1SB006SN	LGB615	451516000N	1142857000W	45.254444	114.4825	1.00	0.50	5.00
1SB007SN	LGB599	451513000N	1142900000W	45.253613	114.48333	1.00	0.50	5.00
1SB008SN	LGB600	451515000N	1142903000W	45.254166	114.48416	0.50	0.15	2.00
1SB009SN	LGB622	451531000N	1143112000W	45.25861	114.52	0.50	0.15	10.00
1SB009TN	LGB607	451531000N	1143112000W	45.25861	114.52	0.30	0.10	10.00
1SB009TN	LGB610	451531000N	1143112000W	45.25861	114.52	0.70	0.10	2.00
1SB010SN	LGB614	451530000N	1143111000W	45.258335	114.51972	0.70	0.20	10.00
1SB011SN	LGB612	451534000N	1143118000W	45.259445	114.52167	0.20	0.10	2.00
1SB012SN	LGB620	451757000N	1143345000W	45.299168	114.5625	0.20	0.20	10.00
1SB013SN	LGB602	451240000N	1142904000W	45.211113	114.48444	0.20	0.10	2.00
1SB014SN	LGB618	451236000N	1142911000W	45.209999	114.48638	0.50	0.15	7.00
1SB015SN	LGB623	451251000N	1142810000W	45.214169	114.46944	0.20	0.07	10.00
1SB016SN	LGB619	451256000N	1142811000W	45.215557	114.46972	0.30	0.20	1.00
1SB017SN	LGB611	451533000N	1142529000W	45.259167	114.42472	0.10	0.05	5.00
1SB018SN	LGB605	451531000N	1142531000W	45.25861	114.42528	0.15	0.05	5.00
1SB019SN	LGB613	451435000N	1142709000W	45.243057	114.4525	0.50	0.15	7.00
1SB020SN	LGB608	451443000N	1142659000W	45.245277	114.44972	0.10	0.05	7.00
1SB021SN	LGB604	451405000N	1142536000W	45.234722	114.42667	0.30	0.15	10.00
1SB022SN	LGB616	451350000N	1142609000W	45.230556	114.43584	0.10	0.10	7.00
1SB023SN	LGB603	451522000N	1142342000W	45.256111	114.395	0.10	0.05	10.00
1SB024SN	LGB617	451523000N	1142340000W	45.25639	114.39444	0.20	< 0.05	10.00
1SB025SN	LGB606	451813000N	1142339000W	45.303612	114.39417	0.15	0.05	7.00

Table 1. File SMMZ1.

Field Number	(0.005) S-Ti ⁸	(20) S-Mn	(1) S-Ag	(500) S-As	(20) S-Au	(20) S-B	(50) S-Ba	(2) S-Be	(20) S-Bi	(50) S-Cd
1SB001SN	> 2	300	N 1	500	N 20	100	500	< 2	N 20	N 50
1SB002SN	> 2	300	N 1	N 500	N 20	30	700	N 2	N 20	N 50
1SB005SN	> 2	700	N 1	N 500	N 20	20	500	N 2	N 20	N 50
1SB006SN	> 2	500	N 1	N 500	N 20	200	700	N 2	N 20	N 50
1SB007SN	1.5	700	N 1	N 500	N 20	200	700	N 2	N 20	N 50
1SB008SN	1	200	N 1	N 500	N 20	50	1500	< 2	N 20	N 50
1SB009SN	2	500	N 1	N 500	N 20	150	700	< 2	N 20	N 50
1SB009TN	1.5	500	N 1	N 500	N 20	200	700	< 2	N 20	N 50
1SB009TN	1	200	N 1	N 500	N 20	30	1000	< 2	N 20	N 50
1SB010SN	2	700	N 1	N 500	N 20	50	1000	< 2	N 20	N 50
1SB011SN	> 2	300	N 1	N 500	N 20	70	700	< 2	N 20	N 50
1SB012SN	> 2	500	N 1	N 500	N 20	50	700	< 2	N 20	N 50
1SB013SN	> 2	300	N 1	N 500	N 20	50	700	< 2	N 20	N 50
1SB014SN	> 2	300	N 1	N 500	N 20	50	700	< 2	N 20	N 50
1SB015SN	> 2	300	N 1	N 500	N 20	100	700	< 2	N 20	N 50
1SB016SN	1.5	200	N 1	N 500	N 20	30	500	N 2	N 20	N 50
1SB017SN	> 2	200	N 1	N 500	N 20	100	500	< 2	N 20	N 50
1SB018SN	> 2	200	N 1	N 500	N 20	20	300	N 2	N 20	N 50
1SB019SN	> 2	300	N 1	N 500	N 20	30	500	N 2	N 20	N 50
1SB020SN	> 2	200	N 1	N 500	N 20	150	700	< 2	N 20	N 50
1SB021SN	> 2	500	N 1	N 500	N 20	20	500	N 2	N 20	N 50
1SB022SN	> 2	500	N 1	N 500	N 20	200	500	N 2	N 20	N 50
1SB023SN	2	300	N 1	N 500	N 20	20	500	N 2	N 20	N 50
1SB024SN	1.5	300	N 1	N 500	N 20	20	300	< 2	N 20	N 50
1SB025SN	> 2	500	N 1	N 500	N 20	20	500	N 2	N 20	N 50

Table 1. File SMMZ1.

Field Number	(10) S-Co	(20) S-Cr	(10) S-Cu	(50) S-La	(10) S-Mo	(50) S-Nb	(10) S-Ni	(20) S-Pb	(200) S-sb	(10) S-sc
1SB001SN	20	70	10	700	N 10	< 50	N 10	150	N 200	30
1SB002SN	20	100	N 10	150	N 10	< 50	N 10	70	N 200	20
1SB005SN	N 10	70	< 10	200	N 10	70	N 10	200	N 200	20
1SB006SN	20	50	10	2000	N 10	< 50	< 10	50	N 200	30
1SB007SN	500	100	50	2000	15	50	50	70	N 200	< 10
1SB008SN	500	50	15	500	N 10	50	N 10	< 20	N 200	N 10
1SB009SN	N 10	50	< 10	150	N 10	< 50	< 10	30	N 200	15
1SB009TN	< 10	50	> 10	300	N 10	N 50	15	30	N 200	20
1SB009TN	N 10	30	< 10	150	N 10	< 50	N 10	20	N 200	< 10
1SB010SN	20	50	> 10	150	N 10	< 50	< 10	50	N 200	10
1SB011SN	N 10	100	N 10	100	10	100	< 10	50	N 200	10
1SB012SN	N 10	30	< 10	300	N 10	70	< 10	20	N 200	10
1SB013SN	20	70	< 10	200	N 10	70	N 10	100	N 200	50
1SB014SN	N 10	100	N 10	150	N 10	100	N 10	50	N 200	15
1SB015SN	N 10	20	N 10	200	N 10	< 50	N 10	100	N 200	15
1SB016SN	N 10	30	N 10	100	N 10	50	< 10	20	N 200	N 10
1SB017SN	N 10	20	N 10	150	N 10	< 50	15	100	N 200	20
1SB018SN	N 10	50	N 10	200	N 10	< 50	15	70	N 200	30
1SB019SN	500	50	> 10	500	N 10	50	N 10	50	N 200	< 10
1SB020SN	N 10	100	N 10	200	N 10	50	N 10	100	N 200	20
1SB021SN	10	200	N 10	500	N 10	50	N 10	50	N 200	20
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1SB024SN	N 10	< 20	N 10	150	N 10	< 50	20	150	N 200	20
1SB025SN	N 10	50	N 10	200	N 10	< 50	N 10	70	N 200	30

Table 1. File SMMZ1.

Field Number	(20) S-Sn	(200) S-Sr	(20) S-V	(100) S-W	(20) S-Y	(500) S-Zn	(20) S-Zr	(200) S-Th
1SB001SN	2000	N 200	50	N 100	1000	N 500	> 2000	2000
1SB002SN	20	< 200	100	< 100	700	N 500	> 2000	N 200
1SB005SN	70	N 200	100	150	1500	N 500	> 2000	N 200
1SB006SN	20	N 200	50	500	500	N 500	> 2000	N 200
1SB007SN	20	200	100	N 100	500	N 500	> 2000	300
1SB008SN	N 20	200	50	150	100	N 500	> 2000	500
1SB009SN	N 20	N 200	50	N 100	500	N 500	> 2000	N 200
1SB009TN	N 20	N 200	50	N 100	700	N 500	> 2000	N 200
1SB009TN	70	< 200	50	N 100	200	N 500	> 2000	500
1SB010SN	< 20	N 200	50	N 100	500	N 500	> 2000	< 200
1SB011SN	100	N 200	100	100	200	N 500	> 2000	< 200
1SB012SN	30	200	70	N 100	700	N 500	> 2000	N 200
1SB013SN	1000	< 200	50	N 100	700	N 500	< 200	N 200
1SB014SN	70	200	70	< 100	300	N 500	> 2000	1500
1SB015SN	N 20	< 200	30	N 100	1000	N 500	> 2000	< 200
1SB016SN	20	N 200	50	N 100	100	N 500	> 2000	< 200
1SB017SN	100	N 200	50	N 100	1500	N 500	> 2000	N 200
1SB018SN	N 20	N 200	100	N 100	2000	N 500	> 2000	200
1SB019SN	20	N 200	70	N 100	700	N 500	> 2000	< 200
1SB020SN	50	N 200	70	N 100	1500	N 500	> 2000	200
1SB021SN	50	N 200	100	N 100	1000	N 500	> 2000	200
1SB022SN	150	N 200	150	150	1000	N 500	> 2000	< 200
1SB023SN	30	N 200	70	N 100	2000	N 500	> 2000	< 200
1SB024SN	N 20	N 200	30	N 100	2000	N 500	> 2000	200
1SB025SN	20	N 200	100	N 100	1000	N 500	> 2000	300

Table 2. File SMMZ2.

Field Number	Lab Number	Latitude ddmmss..h	Longitude ddmmss..h	Latitude	Longitude	(0.05) S-Fe ₈	(0.02) S-Mg ₈	(0.05) S-Ca ₈
2SB601SF	JAW404	451436000N	1142714000W	45.243332	114.45389	1.50	0.30	0.30
2SB602SF	JAW402	451438000N	1142700000W	45.243889	114.45	1.50	0.30	0.30
2SB603SF	JAW403	451440000N	1142657000W	45.244446	114.44917	2.00	0.50	1.00
2SB604SF	JAW407	451432000N	1142637000W	45.242222	114.44361	1.50	0.30	0.50
2SB605SF	JAW405	451428000N	1142628000W	45.241112	114.44111	3.00	0.50	0.50
2SB606SF	JAW412	451429000N	1142641000W	45.24139	114.44473	3.00	0.50	0.70
2SB607SF	JAW408	451424000N	1142614000W	45.240002	114.43723	2.00	0.30	0.20
2SB608SF	JAW453	451406000N	1142537000W	45.235001	114.42694	2.00	0.30	0.50
2SB609SF	JAW411	451255000N	1142533000W	45.215279	114.42583	3.00	0.30	0.50
2SB610SF	JAW400	451256000N	1142529000W	45.215557	114.42472	1.00	0.30	1.00
2SB611SF	JAW410	451312000N	1142550000W	45.220001	114.43055	3.00	0.30	1.00
2SB612SF	JAW420	451324000N	1142557000W	45.223335	114.4325	3.00	1.00	0.50
2SB613SF	JAW417	451350000N	1142608000W	45.230556	114.43555	0.70	0.30	0.70
2SB614SF	JAW418	451353000N	1142604000W	45.231388	114.43445	2.00	0.30	0.50
2SB615SF	JAW416	451351000N	1142617000W	45.230835	114.43806	3.00	0.70	0.30
2SB616SF	JAW438	451358000N	1142538000W	45.232777	114.42722	3.00	0.70	0.70
2SB617SF	JAW433	451359000N	1142527000W	45.233055	114.42416	5.00	0.70	1.00
2SB618SF	JAW458	451409000N	1142531000W	45.235832	114.42528	2.00	0.30	0.50
2SB619SF	JAW450	451408000N	1142526000W	45.235558	114.42389	3.00	0.50	0.70
2SB620SF	JAW449	451417000N	1142521000W	45.238056	114.4225	2.00	0.50	0.20
2SB621SF	JAW461	451432000N	1142528000W	45.242222	114.42444	3.00	0.50	0.50
2SB622SF	JAW463	451432000N	1142514000W	45.242222	114.42056	3.00	0.70	0.50
2SB623SF	JAW448	451446000N	1142519000W	45.246113	114.42194	3.00	0.50	0.70
2SB624SF	JAW443	451532000N	1143122000W	45.258888	114.52278	1.50	0.30	0.30
2SB625SF	JAW454	451609000N	1143101000W	45.269165	114.51694	3.00	0.50	0.50
2SB626SF	JAW445	451621000N	1143045000W	45.272499	114.5125	3.00	0.50	0.50
2SB627SF	JAW442	451625000N	1143042000W	45.273609	114.51167	2.00	0.50	0.70
2SB628SF	JAW460	451441000N	1142924000W	45.244724	114.49	3.00	0.30	0.50
2SB629SF	JAW457	451421000N	1143044000W	45.239166	114.51222	3.00	0.70	0.50
2SB630SF	JAW446	451428000N	1143039000W	45.241112	114.51083	3.00	0.70	0.70
2SB631SF	JAW427	451438000N	1143032000W	45.243889	114.50889	2.00	0.30	0.30
2SB632SF	JAW435	451429000N	1143055000W	45.24139	114.51527	3.00	0.30	0.30
2SB633SF	JAW423	451439000N	1143041000W	45.244167	114.51139	3.00	0.50	0.30
2SB634SF	JAW431	451446000N	1143030000W	45.246113	114.50833	5.00	0.70	0.50
2SB635SF	JAW415	451446000N	1143028000W	45.246113	114.50777	1.50	0.50	0.30

Table 2. File SMMZ2.

Field Number	(0.002) S-Ti*	(10) S-Mn	(0.5) S-Ag	(200) S-Ag	(10) S-Au	(10) S-B	(20) S-Ba	(1) S-Be	(10) S-Bi	(20) S-Cd
2SB601SF	0.30	150	N 0.5	N 200	N 10	20	500	2	N 10	N 20
2SB602SF	0.30	200	N 0.5	N 200	N 10	30	500	1.5	N 10	N 20
2SB603SF	0.50	300	N 0.5	N 200	N 10	< 10	500	2	N 10	N 20
2SB604SF	0.30	300	N 0.5	N 200	N 10	10	500	3	N 10	N 20
2SB605SF	0.50	500	N 0.5	N 200	N 10	10	500	2	N 10	N 20
2SB606SF	0.30	1000	N 0.5	N 200	N 10	10	700	2	N 10	N 20
2SB607SF	0.30	300	N 0.5	N 200	N 10	70	500	1.5	N 10	N 20
2SB608SF	0.30	200	N 0.5	N 200	N 10	30	500	2	N 10	N 20
2SB609SF	0.30	300	N 0.5	N 200	N 10	30	500	2	N 10	N 20
2SB610SF	0.50	200	N 0.5	N 200	N 10	50	500	2	N 10	N 20
2SB611SF	0.20	150	N 0.5	N 200	N 10	< 10	500	2	N 10	N 20
2SB612SF	0.50	700	N 0.5	N 200	N 10	10	300	3	N 10	N 20
2SB613SF	0.20	200	N 0.5	N 200	N 10	30	500	5	N 10	N 20
2SB614SF	0.50	500	N 0.5	N 200	N 10	30	500	2	N 10	N 20
2SB615SF	0.30	200	N 0.5	N 200	N 10	20	200	3	N 10	N 20
2SB616SF	0.30	500	N 0.5	N 200	N 10	100	500	2	N 10	N 20
2SB617SF	0.50	700	N 0.5	N 200	N 10	70	500	2	N 10	N 20
2SB618SF	0.30	300	N 0.5	N 200	N 10	30	100	3	N 10	N 20
2SB619SF	0.30	700	N 0.5	N 200	N 10	20	500	3	N 10	N 20
2SB620SF	0.30	200	N 0.5	N 200	N 10	15	500	2	N 10	N 20
2SB621SF	0.50	500	N 0.5	N 200	N 10	10	700	2	N 10	N 20
2SB622SF	0.50	300	N 0.5	N 200	N 10	20	700	1.5	N 10	N 20
2SB623SF	0.50	500	N 0.5	N 200	N 10	30	700	2	N 10	N 20
2SB624SF	0.30	300	N 0.5	N 200	N 10	10	300	3	N 10	N 20
2SB625SF	0.30	300	N 0.5	N 200	N 10	20	300	2	N 10	N 20
2SB626SF	0.50	200	N 0.5	N 200	N 10	30	700	2	N 10	N 20
2SB627SF	0.30	200	N 0.5	N 200	N 10	15	500	2	N 10	N 20
2SB628SF	0.30	700	N 0.5	N 200	N 10	30	500	2	N 10	N 20
2SB629SF	0.30	700	N 0.5	N 200	N 10	15	300	2	N 10	N 20
2SB630SF	0.30	300	N 0.5	N 200	N 10	30	500	3	N 10	N 20
2SB631SF	0.30	300	N 0.5	N 200	N 10	20	500	3	N 10	N 20
2SB632SF	0.30	1500	N 0.5	N 200	N 10	20	500	3	N 10	N 20
2SB633SF	0.50	500	N 0.5	N 200	N 10	50	300	3	N 10	N 20
2SB634SF	0.50	700	N 0.5	N 200	N 10	20	500	2	N 10	N 20
2SB635SF	0.20	500	N 0.5	N 200	N 10	50	300	2	N 10	N 20

Table 2. File SMMZ2.

Field Number	(5) S-Co	(10) S-cr	(5) S-Cu	(20) S-La	(5) S-Mo	(20) S-Nb	(5) S-Ni	(10) S-Pb	(100) S-Sb	(5) S-Sc
2SB601SF	10	30	20	30	N 5	N 20	15	15	N 100	5
2SB602SF	10	50	30	20	N 5	N 20	15	15	N 100	7
2SB603SF	7	50	10	30	N 5	20	15	20	N 100	10
2SB604SF	10	50	15	30	N 5	< 20	15	20	N 100	7
2SB605SF	20	70	50	50	N 5	< 20	15	20	N 100	10
2SB606SF	30	30	70	20	N 5	< 20	15	20	N 100	10
2SB607SF	30	30	20	20	N 5	< 20	15	20	N 100	7
2SB608SF	15	30	30	30	N 5	< 20	10	20	N 100	7
2SB609SF	7	50	10	20	N 5	< 20	15	20	N 100	7
2SB610SF	7	20	15	30	N 5	< 20	15	20	N 100	5
2SB611SF	5	50	15	50	N 5	< 20	15	15	N 100	7
2SB612SF	10	70	15	50	N 5	< 20	20	20	N 100	5
2SB613SF	5	30	7	20	N 5	< 20	20	30	N 100	10
2SB614SF	5	20	10	300	N 5	20	10	30	N 100	5
2SB615SF	10	50	20	50	N 5	< 20	20	20	N 100	7
2SB616SF	100	70	70	30	N 5	< 20	30	30	N 100	7
2SB617SF	30	50	100	50	N 5	< 20	30	30	N 100	10
2SB618SF	10	30	15	70	N 5	< 20	20	20	N 100	10
2SB619SF	15	50	50	50	N 5	< 20	10	30	N 100	7
2SB620SF	10	50	30	30	N 5	20	20	30	N 100	10
2SB621SF	15	50	50	50	N 5	< 20	15	30	N 100	7
2SB622SF	10	50	15	50	N 5	20	20	30	N 100	10
2SB623SF	10	70	20	50	N 5	< 20	30	30	N 100	10
2SB624SF	7	30	15	20	N 5	< 20	30	30	N 100	15
2SB625SF	20	50	15	30	N 5	< 20	15	30	N 100	7
2SB626SF	10	30	20	30	N 5	< 20	15	30	N 100	10
2SB627SF	30	30	70	30	N 5	< 20	15	20	N 100	7
2SB628SF	30	50	100	20	N 5	< 20	15	20	N 100	7
2SB629SF	15	50	20	20	N 5	< 20	20	50	N 100	7
2SB630SF	30	50	70	50	N 5	< 20	30	30	N 100	10
2SB631SF	20	20	150	30	N 5	< 20	30	30	N 100	10
2SB632SF	100	30	70	30	N 5	< 20	15	30	N 100	7
2SB633SF	150	30	500	30	N 5	< 20	15	30	N 100	7
2SB634SF	300	50	100	20	N 5	< 20	30	20	N 100	10
2SB635SF	150	30	50	30	N 5	< 20	20	30	N 100	7

Table 2. File SMMZ2.

Field Number	(10) s-Sn	(100) s-Sr	(10) s-V	(50) s-W	(10) s-Y	(200) s-Zn	(10) s-Zr	(100) s-Th
2SB601SF	N 10	150	30	N 50	50	N 200	100	N 100
2SB602SF	10	150	50	N 50	20	N 200	100	N 100
2SB603SF	N 10	200	50	N 50	70	N 200	300	N 100
2SB604SF	N 10	200	50	N 50	30	N 200	200	N 100
2SB605SF	N 10	200	50	N 50	30	N 200	150	N 100
2SB606SF	N 10	150	50	N 50	30	N 200	150	N 100
2SB607SF	N 10	100	30	N 50	50	N 200	150	N 100
2SB608SF	N 10	150	50	N 50	50	N 200	150	N 100
2SB609SF	N 10	150	50	N 50	20	N 200	200	N 100
2SB610SF	N 10	200	50	N 50	20	N 200	100	N 100
2SB611SF	N 10	200	50	N 50	100	N 200	150	N 100
2SB612SF	N 10	200	50	N 50	150	N 200	100	N 100
2SB613SF	N 10	200	70	N 50	50	N 200	200	N 100
2SB614SF	10	100	30	N 50	50	N 200	150	N 100
2SB615SF	N 10	100	50	N 50	70	N 200	70	N 100
2SB616SF	< 10	200	50	N 50	30	N 200	200	N 100
2SB617SF	N 10	300	50	N 50	20	N 200	150	N 100
2SB618SF	N 10	200	30	N 50	30	N 200	150	N 100
2SB619SF	N 10	200	70	N 50	30	N 200	500	N 100
2SB620SF	N 10	150	70	N 50	50	N 200	200	N 100
2SB621SF	N 10	200	70	N 50	30	N 200	100	N 100
2SB622SF	10	150	70	N 50	50	N 200	150	N 100
2SB623SF	N 10	200	70	N 50	70	N 200	150	N 100
2SB624SF	N 10	150	50	N 50	50	N 200	200	N 100
2SB625SF	N 10	200	70	N 50	30	N 200	100	N 100
2SB626SF	N 10	150	70	N 50	20	N 200	150	N 100
2SB627SF	N 10	200	70	N 50	30	N 200	150	N 100
2SB628SF	10	150	70	N 50	50	N 200	150	N 100
2SB629SF	N 10	150	70	N 50	30	N 200	100	N 100
2SB630SF	< 10	150	70	N 50	70	N 200	100	N 100
2SB631SF	N 10	150	70	N 50	30	N 200	100	N 100
2SB632SF	< 10	N 100	50	N 50	20	N 200	100	N 100
2SB633SF	10	150	70	N 50	15	N 200	100	N 100
2SB634SF	< 10	150	70	N 50	70	N 200	150	N 100
2SB635SF	N 10	< 100	50	N 50	20	N 200	150	N 100

Table 2. File SMMZ2.

Field Number	Lab Number	Latitude ddmmss...h	Longitude ddmmss...h	Latitude	Longitude	(0.05) S-Fe%	(0.02) S-Mg%	(0.05) S-Ca%
2SB636SF	JAW452	451448000N	1143022000W	45.2446666	114.50611	2.00	0.30	0.30
2SB637SF	JAW444	451459000N	1142942000W	45.249722	114.495	2.00	0.50	0.50
2SB638SF	JAW455	451515000N	1142904000W	45.254166	114.48444	3.00	0.50	0.50
2SB639SF	JAW451	451513000N	1142900000W	45.253613	114.48333	2.00	0.30	0.30
2SB640SF	JAW414	451525000N	1142850000W	45.256943	114.48055	2.00	0.50	0.50
2SB641SF	JAW419	451605000N	1142837000W	45.268055	114.47694	1.50	0.30	0.30
2SB642SF	JAW406	451624000N	1142844000W	45.273335	114.47889	3.00	0.50	0.50
2SB643SF	JAW409	451653000N	1142802000W	45.281387	114.46722	2.00	0.30	0.50
2SB644SF	JAW440	450853000N	1141915000W	45.148056	114.32083	1.00	0.15	1.00
2SB645SF	JAW426	450849000N	1141914000W	45.146946	114.32056	2.00	0.30	0.30
2SB646SF	JAW439	450854000N	1141903000W	45.148335	114.3175	1.00	0.20	0.30
2SB647SF	JAW437	450922000N	1141958000W	45.156113	114.33278	2.00	0.15	0.20
2SB648SF	JAW425	450945000N	1141914000W	45.162502	114.32056	1.50	0.20	0.15
2SB649SF	JAW428	451009000N	1141835000W	45.169167	114.30972	2.00	0.30	0.50
2SB650SF	JAW422	450914000N	1142147000W	45.153889	114.36305	1.00	0.20	0.30
2SB651SF	JAW430	450917000N	1142158000W	45.154724	114.36611	2.00	0.30	0.30
2SB652SF	JAW459	450933000N	1142219000W	45.159168	114.37195	2.00	0.30	0.70
2SB653SF	JAW447	450943000N	1142200000W	45.161945	114.36667	2.00	0.30	0.30
2SB654SF	JAW401	451031000N	1142153000W	45.175278	114.36472	1.50	0.30	0.30
2SB655SF	JAW413	451012000N	1142213000W	45.170002	114.37028	2.00	0.30	0.50
2SB656SF	JAW424	450933000N	1142119000W	45.159168	114.35528	1.00	0.10	0.10
2SB657SF	JAW456	450949000N	1142115000W	45.163612	114.35416	3.00	0.30	0.20
2SB658SF	JAW436	450948000N	1142121000W	45.163334	114.35583	2.00	0.30	0.30
2SB659SF	JAW462	451009000N	1142120000W	45.169167	114.35555	3.00	0.20	0.20
2SB660SF	JAW429	451012000N	1142106000W	45.170002	114.35166	2.00	0.30	0.50
2SB661SF	JAW421	451014000N	1142039000W	45.170555	114.34417	2.00	0.30	0.30
2SB662SF	JAW432	450944000N	1142022000W	45.162224	114.33945	2.00	0.50	0.30
2SB663SF	JAW434	450937000N	1142033000W	45.160278	114.3425	3.00	0.20	0.20
2SB664SF	JAW441	450953000N	1142036000W	45.164722	114.34334	3.00	0.50	0.20

Table 2. File SMMZ2.

Field Number	(0.002) s-Ti*	(10) s-Mn	(0.5) s-Ag	(200) s-As	(10) s-Au	(10) s-B	(20) s-Ba	(1) s-Be	(10) s-Bi	(20) s-cd
2SB636SF	0.20	300	N 0.5	N 200	N 10	30	500	2	N 10	N 20
2SB637SF	0.30	300	N 0.5	N 200	N 10	70	300	2	N 10	N 20
2SB638SF	0.30	300	N 0.5	N 200	N 10	70	500	2	N 10	N 20
2SB639SF	0.30	300	N 0.5	N 200	N 10	70	500	1.5	N 10	N 20
2SB640SF	0.30	300	N 0.5	N 200	N 10	50	500	2	N 10	N 20
2SB641SF	0.30	300	N 0.5	N 200	N 10	70	500	2	N 10	N 20
2SB642SF	0.50	300	N 0.5	N 200	N 10	20	500	2	N 10	N 20
2SB643SF	0.30	300	N 0.5	N 200	N 10	50	500	1.5	N 10	N 20
2SB644SF	0.10	700	N 0.5	N 200	N 10	15	500	2	N 10	N 20
2SB645SF	0.20	300	N 0.5	N 200	N 10	30	300	1	N 10	N 20
2SB646SF	0.10	150	N 0.5	N 200	N 10	15	500	1	N 10	N 20
2SB647SF	0.20	300	N 0.5	N 200	N 10	200	< 1	N 10	N 20	
2SB648SF	0.20	300	N 0.5	N 200	N 10	150	100	1	N 10	N 20
2SB649SF	0.20	300	N 0.5	N 200	N 10	70	150	1.5	N 10	N 20
2SB650SF	0.20	150	N 0.5	N 200	N 10	20	200	2	N 10	N 20
2SB651SF	0.30	1000	N 0.5	N 200	N 10	30	100	2	N 10	N 20
2SB652SF	0.30	700	N 0.5	N 200	N 10	70	700	2	N 10	N 20
2SB653SF	0.20	300	N 0.5	N 200	N 10	70	300	2	N 10	N 20
2SB654SF	0.30	300	N 0.5	N 200	N 10	70	300	2	N 10	N 20
2SB655SF	0.20	300	N 0.5	N 200	N 10	50	300	1.5	N 10	N 20
2SB656SF	0.15	150	N 0.5	N 200	N 10	70	300	2	N 10	N 20
2SB657SF	0.30	300	N 0.5	N 200	N 10	70	70	1	N 10	N 20
2SB658SF	0.30	700	N 0.5	N 200	N 10	10	300	1.5	N 10	N 20
2SB659SF	0.20	200	N 0.5	N 200	N 10	50	500	2	N 10	N 20
2SB660SF	0.20	500	N 0.5	N 200	N 10	30	150	1.5	N 10	N 20
2SB661SF	0.30	500	N 0.5	N 200	N 10	30	300	3	N 10	N 20
2SB662SF	0.30	500	N 0.5	N 200	N 10	50	300	3	N 10	N 20
2SB663SF	0.30	300	N 0.5	N 200	N 10	20	500	2	N 10	N 20
2SB664SF	0.30	700	N 0.5	N 200	N 10	50	150	1.5	N 10	N 20
						20	300	2	N 10	N 20

Table 2. File SMMZ2.

Field Number	(5) S-CO	(10) S-cr	(5) S-Cu	(20) S-La	(5) S-Mo	(20) S-Nb	(5) S-Ni	(10) S-Pb	(100) S-Sb	(5) S-SC
2SB636SF	70	50	50	20	N 5	< 20	15	20	N 100	7
2SB637SF	70	50	70	50	N 5	20	20	20	N 100	7
2SB638SF	70	50	50	30	N 5	< 20	15	20	N 100	7
2SB639SF	20	50	50	70	N 5	< 20	15	20	N 100	5
2SB640SF	50	30	30	30	N 5	< 20	15	20	N 100	7
2SB641SF	30	30	20	20	N 5	N 20	15	20	N 100	5
2SB642SF	30	50	20	70	N 5	< 20	15	20	N 100	10
2SB643SF	30	30	20	30	N 5	< 20	15	20	N 100	7
2SB644SF	30	15	70	20	N 5	< 20	10	10	N 100	< 5
2SB645SF	30	20	70	30	N 5	< 20	20	15	N 100	5
2SB646SF	20	15	50	20	N 5	N 20	15	< 10	N 100	5
2SB647SF	150	20	200	30	N 5	< 20	15	10	N 100	5
2SB648SF	200	20	200	30	N 5	< 20	15	10	N 100	5
2SB649SF	200	20	200	50	N 5	< 20	20	20	N 100	7
2SB650SF	100	50	100	30	N 5	N 20	15	15	N 100	5
2SB651SF	7	20	20	20	N 5	< 20	15	20	N 100	7
2SB652SF	10	50	20	20	N 5	< 20	15	20	N 100	7
2SB653SF	100	30	2000	30	N 5	20	15	20	N 100	7
2SB654SF	100	30	500	20	N 5	< 20	15	15	N 100	7
2SB655SF	100	30	300	30	N 5	< 20	15	20	N 100	7
2SB656SF	15	10	50	20	N 5	N 20	10	< 10	N 100	< 5
2SB657SF	15	50	150	20	N 5	< 20	15	< 10	N 100	7
2SB658SF	20	30	50	30	N 5	< 20	10	30	N 100	5
2SB659SF	50	30	200	70	N 5	< 20	10	10	N 100	5
2SB660SF	15	30	70	30	N 5	< 20	15	20	N 100	7
2SB661SF	10	20	30	30	N 5	< 20	15	20	N 100	7
2SB662SF	70	30	200	70	N 5	< 20	30	20	N 100	7
2SB663SF	70	20	300	20	N 5	< 20	10	10	N 100	5
2SB664SF	30	50	70	50	N 5	< 20	20	15	N 100	7

Table 2. File SMMZ2.

Field Number	(10) S-Sn	(100) S-Sr	(10) S-V	(50) S-W	(10) S-Y	(200) S-Zn	(10) S-Zr	(100) S-Th
2SB636SF	N 10	150	30	N 50	70	N 200	100	N 100
2SB637SF	N 10	150	70	N 50	30	N 200	150	N 100
2SB638SF	N 10	100	50	N 50	30	N 200	100	N 100
2SB639SF	N 10	150	50	N 50	20	N 200	150	N 100
2SB640SF	N 10	150	70	N 50	20	N 200	150	N 100
2SB641SF	N 10	150	30	N 50	30	N 200	150	N 100
2SB642SF	N 10	150	50	N 50	50	N 200	150	N 100
2SB643SF	N 10	150	50	N 50	30	N 200	150	N 100
2SB644SF	N 10	150	30	N 50	15	N 200	70	N 100
2SB645SF	N 10	150	30	N 50	30	N 200	100	N 100
2SB646SF	N 10	N 100	30	N 50	70	N 200	150	N 100
2SB647SF	N 10	N 100	30	N 50	30	N 200	200	N 100
2SB648SF	N 10	N 100	30	N 50	30	N 200	100	N 100
2SB649SF	N 10	< 100	30	N 50	50	N 200	150	N 100
2SB650SF	10	150	30	N 50	50	N 200	100	N 100
2SB651SF	N 10	150	50	N 50	15	N 200	100	N 100
2SB652SF	N 10	150	50	N 50	50	N 200	150	N 100
2SB653SF	N 10	150	50	N 50	50	N 200	150	N 100
2SB654SF	N 10	N 100	30	N 50	30	N 200	150	N 100
2SB655SF	N 10	100	50	N 50	100	N 200	150	N 100
2SB656SF	N 10	N 100	20	N 50	20	N 200	150	N 100
2SB657SF	N 10	N 100	50	N 50	30	N 200	300	N 100
2SB658SF	< 10	< 100	30	N 50	20	N 200	150	N 100
2SB659SF	< 10	N 100	50	N 50	30	N 200	200	N 100
2SB660SF	10	< 100	50	N 50	20	N 200	100	N 100
2SB661SF	15	150	50	N 50	30	N 200	70	N 100
2SB662SF	< 10	150	50	N 50	70	N 200	150	N 100
2SB663SF	< 10	N 100	50	N 50	20	N 200	300	N 100
2SB664SF	< 10	< 100	50	N 50	20	N 200	200	N 100

Table 3. File SMMZ3.

Field Number	Lab Number	Latitude ddmmss..h	Longitude ddmmss..h	(0.05) S-Fe%	(0.02) S-Mg%	(0.05) S-Ca%
1SB301B	LHL051	451404000N	1143122000W	45.234444	114.52278	3.00
1SB302E	LHL046	451406000N	1143137000W	45.235001	114.52695	1.00
1SB303E	LHL049	451413000N	1143149000W	45.236946	114.53028	1.50
1SB305E	LHL042	451517000N	1143222000W	45.254723	114.53944	3.00
1SB306E	LHL047	451524000N	1143225000W	45.256668	114.54028	2.00
1SB327E	LHL037	451757000N	1142642000W	45.299168	114.445	1.00
1SB328E	LHL055	451818000N	1142613000W	45.305	114.43694	0.20
1SB329E	LHL041	451830000N	1142607000W	45.308334	114.43528	0.50
1SB331E	LHL057	451848000N	1142531000W	45.313332	114.42528	5.00
1SB506E	LHL052	451405000N	1143115000W	45.234722	114.52084	3.00
1SB507E	LHL044	451420000N	1143109000W	45.238888	114.51917	5.00
1SB514A	LHL050	452158000N	1141742000W	45.366108	114.295	1.00
2SB001A	LHL124	451405000N	1143134000W	45.234722	114.52612	1.50
2SB002A	LHL122	451410000N	1143143000W	45.236111	114.52862	3.00
2SB003A	LHL126	451412000N	1143146000W	45.236668	114.52945	1.50
2SB004A	LHL119	451417000N	1143154000W	45.238056	114.53167	3.00
2SB005A	LHL118	451418000N	1143156000W	45.238335	114.53223	1.00
2SB006A	LHL130	451420000N	1143158000W	45.238888	114.53278	1.00
2SB007A	LHL127	451422000N	1143158000W	45.239445	114.53278	1.00
2SB008A	LHL137	451440000N	1143154000W	45.244446	114.53167	2.00
2SB009A	LHL129	451445000N	1143157000W	45.245834	114.5325	2.00
2SB010A	LHL123	451454000N	1143204000W	45.248333	114.53445	3.00
2SB011A	LHL120	451457000N	1143210000W	45.249168	114.53611	2.00
2SB012A	LHL136	451504000N	1143215000W	45.25111	114.53775	1.50
2SB013A	LHL139	451809000N	1143042000W	45.302498	114.51167	1.50
2SB014A	LHL135	451810000N	1143040000W	45.302776	114.51111	3.00
2SB015A	LHL138	451813000N	1143037000W	45.303612	114.51028	1.50
2SB016A	LHL121	451815000N	1143035000W	45.304165	114.50972	2.00
2SB017A	LHL132	451820000N	1143027000W	45.305553	114.5075	2.00
2SB018A	LHL131	451807000N	1143041000W	45.301945	114.51139	1.00
2SB019A	LHL125	451808000N	1143040000W	45.302223	114.51111	2.00
2SB020A	LHL115	451810000N	1143037000W	45.302776	114.51028	2.00
2SB021A	LHL105	451811000N	1143033000W	45.303055	114.50916	1.50
2SB022A	LHL109	451751000N	1142656000W	45.297501	114.44889	3.00
2SB023A	LHL112	451803000N	1142637000W	45.300831	114.44361	0.20

Table 3. File SMM23.

Field Number	(0.002) S-Ti ₈	(10) S-Mn	(0.5) S-Ag	(200) S-As	(10) S-Au	(10) S-B	(20) S-Ba	(1) S-Be	(10) S-Bi	(20) S-Cd
1SB301B	0.15	50	N 0.5	N 200	N 10	> 2000	30	< 1	N 10	N 20
1SB302E	0.10	200	N 0.5	N 200	N 10	15	500	1.5	N 10	N 20
1SB303E	0.20	200	N 0.5	N 200	N 10	50	1000	3	N 10	N 20
1SB305E	0.30	500	N 0.5	N 200	N 10	50	1500	3	N 10	N 20
1SB306E	0.30	500	N 0.5	N 200	N 10	30	1000	2	N 10	N 20
1SB327E	0.15	50	N 0.5	N 200	N 10	30	1000	< 1	N 10	N 20
1SB328E	0.10	70	N 0.5	N 200	N 10	30	700	< 1	N 10	N 20
1SB329E	0.07	100	N 0.5	N 200	N 10	< 10	2000	N 1	N 10	N 20
1SB331E	0.50	200	N 0.5	N 200	N 10	10	2000	N 1	N 10	N 20
1SB506E	0.20	50	N 0.5	N 200	N 10	N 10	2000	N 1	N 10	N 20
1SB507E	0.50	300	N 0.5	N 200	N 10	70	700	< 1	N 10	N 20
1SB514A	0.15	200	N 0.5	N 200	N 10	100	1000	1	N 10	N 20
2SB001A	0.20	500	N 0.5	N 200	N 10	10	300	2	N 10	N 20
2SB002A	0.20	700	N 0.5	N 200	N 10	30	2000	5	N 10	N 20
2SB003A	0.30	150	N 0.5	N 200	N 10	N 10	700	3	N 10	N 20
2SB004A	0.30	500	N 0.5	N 200	N 10	10	1500	2	N 10	N 20
2SB005A	0.15	100	N 0.5	N 200	N 10	10	1000	1	N 10	N 20
2SB006A	0.20	150	N 0.5	N 200	N 10	10	700	2	N 10	N 20
2SB007A	0.20	100	N 0.5	N 200	N 10	< 10	1500	1.5	N 10	N 20
2SB008A	0.20	500	N 0.5	N 200	N 10	10	1000	3	N 10	N 20
2SB009A	0.20	500	N 0.5	N 200	N 10	10	1000	2	N 10	N 20
2SB010A	0.30	700	N 0.5	N 200	N 10	20	700	2	N 10	N 20
2SB011A	0.20	500	N 0.5	N 200	N 10	50	1000	3	N 10	N 20
2SB012A	0.15	300	N 0.5	N 200	N 10	50	1500	3	N 10	N 20
2SB013A	0.20	150	N 0.5	N 200	N 10	15	1000	2	N 10	N 20
2SB014A	0.50	500	N 0.5	N 200	N 10	10	1000	2	N 10	N 20
2SB015A	0.15	150	N 0.5	N 200	N 10	20	1500	5	N 10	N 20
2SB016A	0.20	300	N 0.5	N 200	N 10	30	3000	< 1	N 10	N 20
2SB017A	0.20	200	N 0.5	N 200	N 10	20	1000	3	N 10	N 20
2SB018A	0.10	150	N 0.5	N 200	N 10	10	1500	2	N 10	N 20
2SB019A	0.30	300	N 0.5	N 200	N 10	< 10	1500	N 1	N 10	N 20
2SB020A	0.30	700	N 0.5	N 200	N 10	70	2000	3	N 10	N 20
2SB021A	0.20	700	N 0.5	N 200	N 10	20	1000	2	N 10	N 20
2SB022A	0.30	100	N 0.5	N 200	N 10	20	1000	2	N 10	N 20
2SB023A	0.15	100	N 0.5	N 200	N 10	50	1000	1.5	N 10	N 20
						30	500	3	N 10	N 20

Table 3. File SMMZ3.

Field Number	(5) S-Co	(10) S-Cr	(5) S-Cu	(20) S-La	(5) S-Mo	(20) S-Nb	(5) S-Ni	(10) S-Pb	(100) S-Sb	(5) S-Sc
1SB301B	5	< 10	< 5	1000	N 5	N 20	7	10	N 100	< 5
1SB302E	5	< 10	< 5	30	N 5	N 20	5	10	N 100	< 5
1SB303E	5	< 10	< 5	30	N 5	N 20	10	20	N 100	7
1SB305E	7	15	15	30	N 5	N 20	15	20	N 100	7
1SB306E	7	< 10	7	50	N 5	< 20	10	20	N 100	7
1SB327E	< 5	< 10	20	20	N 5	N 20	5	10	N 100	< 5
1SB328E	N 5	< 10	5	30	N 5	N 20	< 5	20	N 100	< 5
1SB329E	N 5	< 10	< 5	20	N 5	N 20	< 5	10	N 100	N 5
1SB331E	7	10	< 5	150	N 5	N 20	20	15	N 100	10
1SB506E	15	10	30	20	N 5	N 20	7	< 10	N 100	5
1SB507E	10	15	< 5	50	N 5	< 20	10	< 10	N 100	10
1SB514A	N 5	N 10	N 5	70	N 5	N 20	< 5	20	N 100	< 5
2SB001A	< 5	< 10	7	30	N 5	N 20	10	20	N 100	5
2SB002A	7	10	10	50	N 5	< 20	10	20	N 100	7
2SB003A	N 5	< 10	5	50	N 5	< 20	5	15	N 100	5
2SB004A	7	10	15	50	N 5	N 20	15	10	N 100	7
2SB005A	< 5	< 10	< 5	30	N 5	N 20	5	15	N 100	< 5
2SB006A	N 5	< 10	7	30	N 5	N 20	7	15	N 100	< 5
2SB007A	< 5	< 10	< 5	30	N 5	N 20	< 5	20	N 100	< 5
2SB008A	5	< 10	7	50	N 5	N 20	10	20	N 100	7
2SB009A	7	< 10	< 5	50	N 5	N 20	7	20	N 100	7
2SB010A	7	> 10	100	50	N 5	N 20	10	50	N 100	7
2SB011A	7	< 10	< 5	50	N 5	N 20	10	15	N 100	5
2SB012A	< 5	< 10	N 5	30	N 5	N 20	5	20	N 100	< 5
2SB013A	5	< 10	< 5	70	N 5	N 20	10	15	N 100	7
2SB014A	7	20	< 5	70	N 5	< 20	20	20	N 100	10
2SB015A	5	< 10	15	50	N 5	N 20	7	20	N 100	5
2SB016A	< 5	< 10	10	30	N 5	N 20	10	15	N 100	5
2SB017A	< 5	< 10	5	50	N 5	N 20	10	15	N 100	5
2SB018A	N 5	< 10	< 5	30	N 5	N 20	5	20	N 100	< 5
2SB019A	5	10	7	50	N 5	< 20	10	20	N 100	7
2SB020A	7	10	5	30	N 5	N 20	10	20	N 100	7
2SB021A	5	< 10	5	20	N 5	N 20	5	15	N 100	7
2SB022A	5	20	< 5	150	N 5	N 20	7	15	N 100	7
2SB023A	N 5	< 10	< 5	30	N 5	N 20	20	N 5	N 100	< 5

Table 3. File SMMZ3.

Field Number	(10) S-Sn	(100) S-Sr	(10) S-V	(50) S-W	(10) S-Y	(200) S-Zn	(10) S-Zr	(100) S-Th	(0.05) AA-Au	(5) AA-As
1SB301B	N 10	100	30	N 50	150	N 200	50	N 100	-	N 5
1SB302E	N 10	< 100	20	N 50	20	N 200	70	N 100	-	N 5
1SB303E	N 10	100	50	N 50	20	N 200	100	N 100	-	N 5
1SB305E	N 10	150	50	N 50	50	N 200	150	N 100	-	N 5
1SB306E	N 10	100	50	N 50	30	N 200	150	N 100	-	10
1SB327E	N 10	N 100	20	N 50	< 10	N 200	100	N 100	-	N 5
1SB328E	N 10	N 100	20	N 50	< 10	N 200	100	N 100	-	< 5
1SB329E	N 10	N 100	20	N 50	< 10	N 200	50	N 100	-	< 5
1SB331E	N 10	N 100	50	N 50	< 10	N 200	150	N 100	-	N 5
1SB506E	N 10	N 100	50	N 50	70	N 200	300	N 100	-	N 5
1SB507E	N 10	N 100	70	N 50	20	N 200	200	N 100	-	40
1SB514A	N 10	N 100	15	N 50	50	N 200	200	N 100	-	80
2SB001A	N 10	< 100	50	N 50	50	N 200	20	N 100	-	N 5
2SB002A	N 10	200	50	N 50	20	N 200	100	N 100	-	N 5
2SB003A	N 10	N 100	50	N 50	30	N 200	150	N 100	-	N 5
2SB004A	N 10	< 100	50	N 50	20	N 200	200	N 100	-	N 5
2SB005A	N 10	N 100	30	N 50	30	N 200	150	N 100	-	N 5
2SB006A	N 10	N 100	20	N 50	10	N 200	100	N 100	-	N 5
2SB007A	N 10	N 100	30	N 50	15	N 200	100	N 100	-	N 5
2SB008A	N 10	200	30	N 50	15	N 200	100	N 100	-	N 5
2SB009A	N 10	200	30	N 50	30	< 200	150	N 100	-	5
2SB010A	N 10	150	50	N 50	30	< 200	200	N 100	-	N 5
2SB011A	N 10	200	50	N 50	50	200	150	N 100	-	N 5
2SB012A	N 10	N 100	20	N 50	20	N 200	100	N 100	-	N 5
2SB013A	N 10	200	30	N 50	20	N 200	100	N 100	-	N 5
2SB014A	N 10	100	70	N 50	50	N 200	150	N 100	-	N 5
2SB015A	N 10	< 100	30	N 50	20	N 200	300	N 100	-	N 5
2SB016A	N 10	< 100	30	N 50	20	N 200	100	N 100	-	15
2SB017A	N 10	N 100	50	N 50	20	N 200	100	N 100	-	N 5
2SB018A	N 10	N 100	20	N 50	10	N 200	150	N 100	-	N 5
2SB019A	N 10	100	70	N 50	30	N 200	70	N 100	-	N 5
2SB020A	N 10	100	50	N 50	20	N 200	150	N 100	-	N 5
2SB021A	N 10	< 100	30	N 50	10	N 200	150	N 100	-	45
2SB022A	N 10	< 100	70	N 50	30	N 200	70	N 100	-	< 5
2SB023A	N 10	150	20	N 50	< 10	N 200	300	N 100	-	10

Table 3. File SMMZ3.

Field Number	(2) AA-Bi	(0,1) AA-Cd	(1) AA-Sb	(5) AA-Zn
	AA-Bi	AA-Cd	AA-Sb	AA-Zn
1SB301B	N 2	0.30	N 1	65
1SB302E	N 2	< 0.1	N 1	15
1SB303E	N 2	0.30	N 1	35
1SB305E	N 2	N 0.1	N 1	65
1SB306E	N 2	0.10	N 1	85
1SB327E	N 2	N 0.1	N 1	30
1SB328E	N 2	0.20	N 1	30
1SB329E	N 2	N 0.1	N 1	75
1SB331E	N 2	0.30	N 1	25
1SB506E	N 2	0.40	N 1	20
1SB507E	N 2	N 0.1	40	20
1SB514A	N 2	0.20	N 1	15
2SB001A	N 2	0.10	N 1	20
2SB002A	N 2	0.20	N 1	110
2SB003A	N 2	0.10	N 1	5
2SB004A	N 2	0.10	N 1	40
2SB005A	N 2	0.10	N 1	55
2SB006A	N 2	N 0.1	N 1	5
2SB007A	N 2	N 0.1	N 1	15
2SB008A	N 2	N 0.1	N 1	140
2SB009A	N 2	0.10	N 1	40
2SB010A	N 2	0.40	N 1	350
2SB011A	N 2	0.20	N 1	45
2SB012A	N 2	N 0.1	N 1	65
2SB013A	N 2	N 0.1	N 1	100
2SB014A	N 2	N 0.1	N 1	15
2SB015A	N 2	N 0.1	N 1	10
2SB016A	N 2	0.20	N 1	60
2SB017A	N 2	0.20	N 1	25
2SB018A	N 2	0.20	N 1	30
2SB019A	N 2	N 0.1	N 1	15
2SB020A	N 2	0.10	N 1	65
2SB021A	N 2	N 0.1	N 1	75
2SB022A	N 2	< 0.1	N 1	15
2SB023A	N 2	< 0.1	N 1	5

Table 3. File SMMZ3.

Field Number	Lab Number	Latitude ddmmss...h	Longitude ddmmss...h	(0.05) S-Fe ³⁺	(0.02) S-Mg ²⁺	(0.05) S-Ca ²⁺
2SB024A	LHL117	451614000N	1143255000W	45.270554	114.54861	0.10
2SB024A	LHL141	451811000N	1142620000W	45.303055	114.43889	< 0.05
2SB025A	LHL098	451843000N	1142600000W	45.311943	114.433333	< 0.05
2SB026A	LHL110	451849000N	1142554000W	45.31361	114.43166	< 0.05
2SB027A	LHL097	451850000N	1142540000W	45.313889	114.42777	< 0.05
2SB028A1	LHL133	451842000N	1142455000W	45.311665	114.41528	0.05
2SB028A2	LHL128	451842000N	1142455000W	45.311665	114.41528	0.07
2SB028A2	LHL140	451842000N	1142455000W	45.311665	114.41528	< 0.05
2SB029A	LHL134	451841000N	1142455000W	45.31139	114.41528	0.70
2SB030A	LHL114	451411000N	1143114000W	45.236389	114.52056	< 0.05
2SB031A1	LHL113	451415000N	114311000W	45.237499	114.51972	< 0.05
2SB031A2	LHL095	451415000N	114311000W	45.237499	114.51972	< 0.05
2SB031A2	LHL102	451415000N	114311000W	45.237499	114.51972	< 0.05
2SB032A	LHL104	451415000N	1143114000W	45.237499	114.52056	0.05
2SB033A	LHL101	451426000N	1143104000W	45.240555	114.51778	< 0.05
2SB034A	LHL099	451433000N	1143058000W	45.2425	114.51611	0.15
2SB035A	LHL106	451442000N	1143046000W	45.244999	114.51278	1.00
2SB036A	LHL096	451444000N	1143042000W	45.245556	114.51167	0.15
2SB037A	LHL111	451510000N	1143218000W	45.252777	114.53833	0.50
2SB038A	LHL100	451542000N	1143241000W	45.261665	114.54472	0.30
2SB040A	LHL103	451612000N	1143249000W	45.27	114.54694	0.15
2SB041A	LHL116	451544000N	1143246000W	45.262222	114.54611	0.70
2SB042A	LHL108	451617000N	1143301000W	45.271389	114.55028	0.20
2SB043A1	LHL038	451622000N	1143311000W	45.272778	114.55305	1.00
2SB043A2	LHL040	451622000N	1143311000W	45.272778	114.55305	1.00
2SB043A2	LHL056	451622000N	1143311000W	45.272778	114.55305	0.50
2SB044A	LHL036	451623000N	1143313000W	45.273056	114.55361	0.30
2SB046A	LHL053	451628000N	1143323000W	45.274445	114.55639	0.15
2SB047A	LHL054	451629000N	1143337000W	45.274723	114.56028	0.20
2SB308A	LHL048	451358000N	1142710000W	45.232777	114.452277	0.20
2SB323A	LHL035	451429000N	1142600000W	45.24139	114.433333	0.07
2SB327A	LHL043	451834000N	1142650000W	45.30944	114.43472	0.50
2SB351A	LHL045	451757000N	1142651000W	45.299168	114.4475	0.15
2SB359A	LHL039	451854000N	1142551000W	45.314999	114.43083	0.10
2SB368A	LHL061	451735000N	1142456000W	45.293056	114.41556	< 0.05

Table 3. File SMMZ3.

Field Number	(0.002) S-Ti%	(10) S-Mn	(0.5) S-Ag	(10) S-Au	(10) S-B	(20) S-Ba	(1) S-Be	(10) S-Bi	(20) S-Cd
2SB024A	0.10	200	N 0.5	N 200	N 10 < 10	300	2	N 10	N 20
2SB024A	0.07	100	N 0.5	N 200	N 10	2000	N 1	N 10	N 20
2SB025A	0.20	100	N 0.5	N 200	N 10	70	3	N 10	N 20
2SB026A	0.15	100	N 0.5	N 200	N 10	10	1000	N 1	N 20
2SB027A	0.10	150	N 0.5	N 200	N 10	10	1000	N 1	N 20
2SB028A1	0.15	200	N 0.5	N 200	N 10	10	1500	N 1	N 20
2SB028A2	0.20	200	N 0.5	N 200	N 10	< 10	1500	N 1	N 20
2SB028A2	0.15	150	N 0.5	N 200	N 10	10	2000	N 1	N 20
2SB029A	0.30	300	N 0.5	N 200	N 10	50	1500	2	N 10
2SB030A	0.20	150	N 0.5	N 200	N 10	50	500	1	N 10
2SB031A1	0.20	200	N 0.5	N 200	N 10	70	500	2	N 10
2SB031A2	0.15	100	N 0.5	N 200	N 10	70	500	1	N 10
2SB031A2	0.15	150	N 0.5	N 200	N 10	50	1000	2	N 10
2SB032A	0.15	150	N 0.5	N 200	N 10	70	300	2	N 10
2SB033A	0.30	200	N 0.5	N 200	N 10	15	1500	N 1	N 20
2SB034A	0.30	300	N 0.5	N 200	N 10	70	700	3	N 10
2SB035A	0.20	300	N 0.5	N 200	N 10	30	1500	N 10	N 20
2SB036A	0.20	150	N 0.5	N 200	N 10	50	1000	N 1	N 20
2SB037A	0.20	300	N 0.5	N 200	N 10	20	700	1	N 10
2SB038A	0.30	700	N 0.5	N 200	N 10	10	1000	3	N 10
2SB040A	0.15	200	N 0.5	N 200	N 10	10	1000	2	N 10
2SB041A	0.20	700	N 0.5	N 200	N 10	20	700	3	N 10
2SB042A	0.20	300	N 0.5	N 200	N 10	50	1000	3	N 10
2SB043A1	0.20	300	N 0.5	N 200	N 10	200	1000	2	N 10
2SB043A2	0.30	1000	N 0.5	N 200	N 10	200	2000	3	N 10
2SB043A2	0.50	700	N 0.5	N 200	N 10	70	2000	1.5	N 10
2SB044A	0.20	200	N 0.5	N 200	N 10	70	300	5	N 10
2SB046A	0.20	1500	N 0.5	N 200	N 10	70	2000	2	N 10
2SB047A	0.20	300	N 0.5	N 200	N 10	50	2000	1.5	N 10
2SB308A	0.15	50	N 0.5	N 200	N 10	> 2000	20	3	N 10
2SB323A	0.20	150	N 0.5	N 200	N 10	70	500	7	N 10
2SB327A	0.15	100	N 0.5	N 200	N 10	10	1500	1	N 10
2SB351A	0.15	100	N 0.5	N 200	N 10	70	700	2	N 10
2SB359A	0.15	200	N 0.5	N 200	N 10	30	2000	N 10	N 20
2SB368A	0.15	100	N 0.5	N 200	N 10	30	700	N 10	N 20

Table 3. File SMMZ3.

Field Number	(5) s-Co	(10) s-Cr	(5) s-Cu	(20) s-La	(5) s-Mo	(20) s-Nb	(5) s-Ni	(10) s-Pb	(100) s-Sb	(5) s-Sc
2SB024A	< 5	< 10	20	30	N 5	N 20	< 5	20	N 100	5
2SB024A	N 5	N 10	< 5	20	N 5	N 20	N 5	10	N 100	N 5
2SB025A	5	10	15	100	N 5	N 20	10	N 10	N 100	7
2SB026A	5	< 10	N 5	30	N 5	N 20	15	< 10	N 100	5
2SB027A	5	< 10	< 5	20	N 5	N 20	15	10	N 100	< 5
2SB028A1	< 5	< 10	< 5	100	N 5	N 20	15	10	N 100	5
2SB028A2	5	10	< 5	50	N 5	N 20	10	15	N 100	5
2SB028A2	N 5	< 10	< 5	100	N 5	N 20	10	15	N 100	5
2SB029A	7	10	7	50	N 5	N 20	15	15	N 100	5
2SB030A	70	10	100	20	N 5	N 20	15	20	N 100	7
2SB031A1	70	< 10	70	20	N 5	N 20	7	N 10	N 100	5
2SB031A2	30	< 10	70	20	N 5	N 20	5	< 10	N 100	5
2SB032A	70	< 10	50	20	N 5	N 20	5	< 10	N 100	5
2SB033A	10	10	10	20	N 5	N 20	7	10	N 100	7
2SB034A	10	10	200	30	N 5	N 20	7	< 10	N 100	7
2SB035A	7	< 10	7	20	N 5	N 20	15	< 10	N 100	7
2SB036A	7	10	< 5	30	N 5	< 20	15	< 10	N 100	7
2SB037A	< 5	10	< 5	30	N 5	N 20	10	10	N 100	7
2SB038A	7	10	< 5	50	N 5	N 20	5	20	N 100	5
2SB040A	< 5	< 10	15	30	N 5	< 20	15	50	N 100	7
2SB041A	10	10	20	30	N 5	N 20	7	10	N 100	7
2SB042A	5	< 10	< 5	30	N 5	N 20	15	20	N 100	7
2SB043A1	10	20	10	100	N 5	N 20	5	20	N 100	5
2SB043A2	?	15	10	30	N 5	< 20	15	20	N 100	7
2SB043A2	10	15	10	50	N 5	< 20	10	20	N 100	5
2SB044A	7	10	10	70	N 5	< 20	7	15	N 100	10
2SB044A	20	< 10	500	30	N 5	< 20	15	20	N 100	20
2SB323A	< 5	< 10	< 5	30	N 5	N 20	7	< 10	N 100	7
2SB327A	N 5	< 10	< 5	70	N 5	N 20	5	< 10	N 100	5
2SB351A	< 5	10	< 5	70	N 5	N 20	7	10	N 100	5
2SB359A	< 5	5	< 10	70	N 5	N 20	5	15	N 100	5
2SB368A			< 5	50	N 5	N 20	5	< 10	N 100	5

Table 3. File SMMZ3.

Field Number	(10) s-Sn	(10) s-Sr	(10) s-V	(50) s-W	(10) s-Y	(200) s-Zn	(10) s-Zr	(100) s-Th	(0.05) AA-Au	(5) AA-As
2SB024A	N 10	< 100	20	N 50	15	N 200	70	N 100	-	N 5
2SB024A	N 10	N 100	20	N 50	N 10	N 200	70	N 100	-	N 5
2SB025A	N 10	N 100	50	N 50	30	N 200	150	N 100	-	< 5
2SB026A	N 10	N 100	50	N 50	20	N 200	100	N 100	-	15
2SB027A	N 10	N 100	50	N 50	20	N 200	70	N 100	-	< 5
2SB028A1	N 10	N 100	30	N 50	50	N 200	150	N 100	-	5
2SB028A2	N 10	N 100	30	N 50	50	N 200	200	N 100	-	N 5
2SB028A2	N 10	N 100	30	N 50	20	N 200	100	N 100	-	5
2SB029A	N 10	150	50	N 50	30	N 200	150	N 100	-	N 5
2SB030A	N 10	N 100	30	N 50	20	N 200	300	N 100	N 0.05	130
2SB031A1	N 10	N 100	30	N 50	30	N 200	200	N 100	-	20
2SB031A2	N 10	N 100	50	N 50	20	N 200	200	N 100	-	20
2SB031A2	N 10	N 100	20	N 50	20	N 200	100	N 100	-	10
2SB032A	N 10	N 100	30	N 50	20	N 200	100	N 100	-	130
2SB033A	N 10	N 100	50	N 50	20	N 200	100	N 100	-	N 5
2SB034A	N 10	N 100	50	N 50	50	N 200	200	N 100	-	10
2SB035A	N 10	N 100	30	N 50	50	N 200	150	N 100	-	< 5
2SB036A	N 10	< 100	20	N 50	30	N 200	200	N 100	-	< 5
2SB037A	N 10	< 100	50	N 50	20	N 200	150	N 100	-	10
2SB038A	N 10	150	50	N 50	30	N 200	150	N 100	-	< 5
2SB040A	N 10	< 100	30	N 50	20	N 200	70	N 100	-	N 5
2SB041A	N 10	< 100	50	N 50	20	N 200	100	N 100	-	N 5
2SB042A	N 10	N 100	30	N 50	20	N 200	100	N 100	-	15
2SB043A1	N 10	100	50	N 50	70	N 200	150	N 100	-	15
2SB043A2	N 10	100	50	N 50	20	N 200	150	N 100	-	30
2SB043A2	N 10	100	70	N 50	30	N 200	100	N 100	N 0.05	150
2SB044A	N 10	100	30	N 50	20	N 200	100	N 100	-	N 5
2SB046A	N 10	100	30	N 50	30	N 200	700	150	N 100	< 5
2SB047A	< 10	100	50	N 50	20	N 200	150	N 100	N 0.05	110
2SB308A	N 10	N 100	70	N 50	300	N 200	100	N 100	-	20
2SB323A	N 10	N 100	20	N 50	30	N 200	150	N 100	-	< 5
2SB327A	N 10	100	30	N 50	20	N 200	150	N 100	N 0.05	110
2SB351A	< 10	< 100	50	N 50	20	N 200	150	N 100	-	N 5
2SB359A	N 10	100	30	N 50	30	N 200	150	N 100	-	20
2SB368A	N 10	N 100	15	N 50	20	N 200	150	N 100	-	N 5

Table 3. File SMMZ3.

Field Number	(2) AA-Bi	(0,1) AA-Cd	(1) AA-Sb	(5) AA-Zn
2SB024A	N 2	N 0.1	N 1	85
2SB024A	N 2	N 0.1	N 1	5
2SB025A	N 2	N 0.1	N 1	10
2SB026A	N 2	N 0.1	N 1	10
2SB027A	N 2	N 0.1	N 1	10
2SB028A1	N 2	0.20	N 1	15
2SB028A2	N 2	N 0.1	N 1	10
2SB028A2	N 2	0.20	N 1	5
2SB029A	N 2	N 0.1	N 1	10
2SB030A	N 2	N 0.1	N 1	55
2SB031A1	N 2	0.10	N 1	10
2SB031A2	N 2	0.30	N 1	15
2SB031A2	N 2	0.20	N 1	10
2SB032A	N 2	0.10	N 1	45
2SB033A	N 2	0.10	N 1	10
2SB034A	N 2	N 0.1	N 1	30
2SB035A	N 2	< 0.1	N 1	20
2SB036A	N 2	0.20	N 1	30
2SB037A	N 2	N 0.1	N 1	15
2SB038A	N 2	N 0.1	N 1	40
2SB040A	N 2	0.10	N 1	85
2SB041A	N 2	N 0.1	N 1	30
2SB042A	N 2	N 0.1	N 1	80
2SB043A1	N 2	N 0.1	N 1	80
2SB043A2	N 2	N 0.1	N 1	75
2SB043A2	N 2	0.30	N 1	5
2SB044A	N 2	N 0.1	N 1	20
2SB046A	N 2	0.20	N 1	100
2SB047A	N 2	0.10	N 1	730
2SB308A	N 2	0.30	N 1	10
2SB323A	N 2	0.40	N 1	60
2SB327A	4	0.10	N 1	110
2SB351A	N 2	0.10	< 1	80
2SB359A	N 2	N 0.1	N 1	10
2SB368A	N 2	0.30	N 1	40

Table 3. File SMMZ3.

Field Number	Lab Number	Latitude ddmmss..h	Longitude ddmmss..h	Latitude	Longitude	(0.05) S-Fe%	(0.02) S-Mg%	(0.05) S-Ca%
2SB374A	LHL058	451817000N	1143007000W	45.304722	114.50195	2.00	0.50	0.05
2SB400A	LHL081	451518000N	1143208000W	45.255001	114.53555	2.00	1.00	0.20
2SB417A	LHL075	451802000N	1143322000W	45.300556	114.55611	10.00	0.30	0.30
2SB509A	LHL087	451429000N	1142630000W	45.24139	114.44167	5.00	0.50	0.70
2SB510A	LHL071	451425000N	1142558000W	45.240276	114.43278	0.50	0.05	< 0.05
2SB511A	LHL080	451420000N	1142553000W	45.238888	114.43139	0.50	0.15	0.05
2SB511B	LHL073	451421000N	1142552000W	45.239166	114.43111	2.00	0.15	< 0.05
2SB514A	LHL067	451432000N	1142633000W	45.242222	114.4425	7.00	0.70	0.05
2SB515A	LHL085	451526000N	1142436000W	45.257221	114.41	0.15	0.05	2.00
2SB516A	LHL093	451519000N	1142436000W	45.25528	114.41	1.50	0.05	0.20
2SB517A	LHL083	451516000N	1142436000W	45.254444	114.41	1.00	0.05	0.15
2SB518A	LHL077	451517000N	1142422000W	45.254723	114.40611	0.50	0.05	0.05
2SB520A	LHL065	451404000N	1142534000W	45.234444	114.42611	3.00	0.50	0.15
2SB520B	LHL078	451404000N	1142534000W	45.234444	114.42611	10.00	2.00	3.00
2SB521A1	LHL063	451419000N	1142527000W	45.238613	114.42416	3.00	0.50	0.15
2SB521A2	LHL059	451418000N	1142527000W	45.238335	114.42416	5.00	0.50	0.15
2SB521A2	LHL089	451418000N	1142527000W	45.238335	114.42416	5.00	0.70	0.15
2SB522A	LHL069	451417000N	1142530000W	45.238056	114.4245	5.00	0.30	0.05
2SB524A	LHL091	451424000N	1142535000W	45.240002	114.42638	5.00	0.30	0.05
2SB527A	LHL066	451412000N	1142543000W	45.236668	114.42861	2.00	0.20	< 0.05
2SB528A	LHL088	451411000N	1142546000W	45.236389	114.42944	7.00	0.50	0.10
2SB530A	LHL076	451424000N	1142617000W	45.240002	114.43806	2.00	0.50	2.00
2SB533A	LHL068	451756000N	1142303000W	45.298889	114.38416	3.00	0.30	< 0.05
2SB535A	LHL062	451756000N	1142428000W	45.298889	114.40778	2.00	0.70	0.10
2SB535B	LHL092	451756000N	1142428000W	45.298889	114.40778	0.50	0.20	1.00
2SB536A	LHL064	451513000N	1142608000W	45.253613	114.43555	1.50	0.20	0.20
2SB544A	LHL070	451223000N	1142335000W	45.20639	114.39305	2.00	0.50	0.07
2SB545A	LHL082	452241000N	1140435000W	45.378056	114.07639	5.00	3.00	7.00
2SB548A	LHL084	451415000N	1143046000W	45.237499	114.51278	10.00	5.00	5.00
2SB550A	LHL079	451420000N	11431109000W	45.238888	114.51917	1.50	0.10	0.05
2SB550B	LHL090	451420000N	11431107000W	45.238888	114.51862	2.00	0.20	< 0.05
2SB550C	LHL094	451420000N	11431107000W	45.238888	114.51862	15.00	3.00	0.30
2SB551A	LHL074	451433000N	1143058000W	45.2425	114.51611	3.00	3.00	5.00
2SB559A	LHL060	451215000N	1142728000W	45.204166	114.45777	0.30	0.20	< 0.05
2SB561A	LHL072	451439000N	1143050000W	45.244167	114.51389	10.00	1.50	0.05

Table 3. File SMMZ3.

Field Number	(0.002) S-Ti%	(10) S-Mn	(0.5) S-Ag	(200) S-Ag	(10) S-Au	(10) S-B	(20) S-Ba	(1) S-Be	(10) S-Bi	(20) S-Cd
2SB374A	0.30	200	N 0.5	N 200	N 10	20	1500	1.5	N 10	N 20
2SB400A	0.30	300	N 0.5	N 200	N 10	30	2000	2	N 10	N 20
2SB417A	0.05	300	30	> 10000	N 10	N 10	50	1	1000	N 20
2SB509A	0.50	200	N 0.5	N 200	N 10	200	1000	1.5	N 10	N 20
2SB510A	0.02	300	N 0.5	N 200	N 10	N 10	< 20	10	N 10	N 20
2SB511A	0.10	70	N 0.5	N 200	N 10	N 10	2000	N 1	N 10	N 20
2SB511B	0.15	70	N 0.5	N 200	N 10	N 10	2000	N 1	N 10	N 20
2SB514A	0.20	150	N 0.5	N 200	N 10	< 10	2000	N 1	N 10	N 20
2SB515A	0.70	20	N 0.5	N 200	N 10	20	1000	1.5	N 10	N 20
2SB516A	0.07	200	N 0.5	N 200	N 10	N 10	50	3	N 10	N 20
2SB517A	0.10	300	N 0.5	N 200	N 10	N 10	< 20	1.5	N 10	N 20
2SB518A	0.05	150	N 0.5	N 200	N 10	N 10	20	1.5	N 10	N 20
2SB520A	0.20	300	N 0.5	N 200	N 10	N 10	20	N 1	N 10	N 20
2SB520B	1.00	1000	N 0.5	N 200	N 10	N 10	30	700	< 1	N 10
2SB521A1	0.20	100	N 0.5	N 200	N 10	N 10	300	N 1	N 10	N 20
2SB521A2	0.30	150	N 0.5	N 200	N 10	N 10	20	1000	2	N 10
2SB521A2	0.30	150	N 0.5	N 200	N 10	N 10	20	700	2	N 10
2SB522A	0.20	200	N 0.5	N 200	N 10	N 10	70	700	3	N 10
2SB524A	0.30	300	N 0.5	N 200	N 10	N 10	30	1000	2	N 10
2SB527A	0.15	150	N 0.5	N 200	N 10	N 10	50	2000	N 1	N 10
2SB528A	0.20	100	N 0.5	N 200	N 10	N 10	30	700	N 1	N 10
2SB530A	0.30	100	N 0.5	N 200	N 10	N 10	200	1000	2	N 10
2SB533A	0.30	200	N 0.5	N 200	N 10	N 10	20	300	2	N 10
2SB535A	0.30	150	N 0.5	N 200	N 10	N 10	10	2000	1	N 10
2SB535B	0.05	150	N 0.5	N 200	N 10	N 10	10	1000	1.5	N 10
2SB536A	0.10	150	N 0.5	N 200	N 10	N 10	2000	2000	2	N 10
2SB544A	0.20	200	N 0.5	N 200	N 10	N 10	10	300	3	N 10
2SB545A	0.30	1000	N 0.5	N 200	N 10	N 10	10	1500	1	N 10
2SB548A	1.00	1000	N 0.5	N 200	N 10	N 10	100	1000	N 1	N 10
2SB550A	0.05	30	N 0.5	N 200	N 10	N 10	700	700	< 1	N 10
2SB550B	0.10	100	N 0.5	N 200	N 10	N 10	70	300	N 1	N 10
2SB550C	1.00	1000	N 0.5	N 200	N 10	N 10	10	1000	N 1	N 10
2SB551A	0.30	1000	N 0.5	N 200	N 10	N 10	1000	1000	1.5	N 10
2SB559A	0.05	70	N 0.5	N 200	N 10	N 10	200	300	N 1	N 10
2SB561A	0.50	200	N 0.5	N 200	N 10	N 10	1000	1000	N 1	N 10

Field Number	(10) S-Co	(5) S-Cu	(20) S-La	(10) S-Cr	(5) S-Cu	(20) S-La	(10) S-Ni	(5) S-Pb	(20) S-SD
2SB374A	7	10	< 5	30	N 5	N 20	7	< 10	N 100
2SB400A	7	10	< 5	20	N 5	N 20	15	20	N 100
2SB417A	2000	N 10	> 20000	< 20	N 5	N 20	700	10	N 100
2SB509A	10	10	20	70	N 5	< 20	10	< 10	N 100
2SB510A	N 5	N 10	< 5	30	N 5	20	< 5	50	N 100
2SB511A	< 5	N 10	5	30	N 5	N 20	5	10	N 100
2SB511B	5	< 10	< 5	30	N 5	N 20	7	15	N 100
2SB514A	20	< 10	700	20	N 5	N 20	5	N 10	N 100
2SB515A	< 5	20	5	30	N 5	N 20	N 5	< 10	N 100
2SB516A	N 5	< 10	5	50	N 5	100	< 5	15	N 100
2SB517A	N 5	N 10	< 5	150	N 5	30	< 5	10	N 100
2SB518A	N 5	< 10	50	30	N 5	< 20	< 5	10	N 100
2SB520A	7	N 10	10	30	N 5	N 20	5	< 10	N 100
2SB520B	20	< 10	70	50	N 5	< 20	10	< 10	N 100
2SB521A1	7	< 10	7	30	N 5	N 20	7	< 10	N 100
2SB521A2	7	< 10	7	30	N 5	N 20	7	N 10	N 100
2SB521A2	7	< 10	15	20	N 5	N 20	5	N 10	N 100
2SB522A	7	< 10	100	20	N 5	N 20	7	< 10	N 100
2SB524A	20	< 10	50	20	N 5	N 20	5	< 10	N 100
2SB527A	10	< 10	500	20	N 5	N 20	< 5	N 10	N 100
2SB528A	700	< 10	1500	20	N 5	N 20	50	N 10	N 100
2SB530A	20	10	300	50	N 5	N 20	15	10	N 100
2SB533A	7	< 10	1500	30	N 5	< 20	10	30	N 100
2SB535A	10	10	< 5	70	N 5	20	20	10	N 100
2SB535B	N 5	< 10	10	20	N 5	N 20	< 5	30	N 100
2SB536A	< 5	< 10	5	50	N 5	N 20	< 5	15	N 100
2SB544A	7	10	7	30	N 5	N 20	5	10	N 100
2SB545A	20	150	70	20	N 5	N 20	50	< 10	N 100
2SB548A	30	200	30	30	N 5	N 20	100	< 10	N 100
2SB550A	200	N 10	70	30	N 5	N 20	10	< 10	N 100
2SB550B	10	< 10	20	30	N 5	N 20	< 5	N 10	N 100
2SB550C	50	100	100	30	N 5	< 20	30	< 10	N 100
2SB551A	30	1000	70	20	N 5	N 20	100	N 10	N 100
2SB559A	< 5	< 10	5	30	N 5	N 20	5	10	N 100
2SB561A	20	700	< 5	< 20	N 5	N 20	50	N 10	N 100

Table 3. File SMMZ3.

Field Number	(10) S-Sn	(100) S-Sr	(10) S-V	(50) S-W	(10) S-Y	(200) S-Zn	(10) S-Zr	(100) S-Th	(0.05) AA-Au	(5) AA-As
2SB374A	N 10	< 100	50	N 50	15	N 200	100	N 100	-	N 5
2SB400A	N 10	100	50	N 50	20	N 200	70	N 100	-	N 5
2SB417A	< 10	N 100	10	N 50	70	300	50	N 100	-	H 830
2SB509A	N 10	N 100	70	N 50	30	N 200	200	N 100	-	10
2SB510A	20	N 100	10	N 50	70	N 200	70	N 100	-	N 5
2SB511A	N 10	N 100	10	N 50	10	N 200	70	N 100	-	N 5
2SB511B	N 10	< 100	30	N 50	10	N 200	70	N 100	-	N 5
2SB514A	N 10	N 100	50	N 50	20	N 200	70	N 100	-	N 5
2SB515A	N 10	300	50	N 50	10	N 200	100	N 100	-	20
2SB516A	N 10	N 100	10	N 50	150	N 200	300	N 100	-	N 5
2SB517A	N 10	N 100	< 10	N 50	50	N 200	100	N 100	-	N 5
2SB518A	N 10	N 100	10	N 50	20	N 200	100	N 100	-	N 5
2SB520A	N 10	N 100	30	N 50	15	N 200	300	N 100	-	N 5
2SB520B	N 10	200	150	N 50	20	N 200	70	N 100	-	< 5
2SB521A1	N 10	< 100	30	N 50	15	N 200	100	N 100	-	N 5
2SB521A2	N 10	N 100	50	N 50	20	N 200	50	N 100	-	N 5
2SB521A2	N 10	N 100	50	N 50	15	N 200	150	N 100	-	N 5
2SB522A	N 10	N 100	30	N 50	20	N 200	100	N 100	-	N 5
2SB524A	N 10	N 100	50	N 50	20	N 200	100	N 100	-	N 5
2SB527A	N 10	N 100	20	N 50	10	N 200	100	N 100	-	10
2SB528A	N 10	N 100	15	N 50	50	N 200	200	N 100	-	N 5
2SB530A	N 10	< 100	50	N 50	20	N 200	150	N 100	-	N 5
2SB533A	10	< 100	50	N 50	20	N 200	150	N 100	-	N 5
2SB535A	N 10	< 100	30	N 50	20	N 200	150	N 100	-	N 5
2SB535B	N 10	200	10	N 50	10	N 200	200	N 100	-	N 5
2SB536A	N 10	< 100	10	N 50	20	N 200	20	N 100	-	N 5
2SB544A	N 10	< 100	50	N 50	20	N 200	70	N 100	-	N 5
2SB545A	N 10	< 100	100	N 50	20	N 200	100	N 100	-	N 5
2SB548A	N 10	500	100	N 50	20	N 200	15	N 100	-	N 5
2SB550A	N 10	N 100	< 10	N 50	20	N 200	100	N 100	-	N 5
2SB550B	N 10	N 100	15	N 50	20	N 200	70	N 100	< 0.05	220
2SB550C	N 10	N 100	100	N 50	15	N 200	150	N 100	-	20
2SB551A	N 10	100	100	N 50	30	N 200	100	N 100	-	10
2SB559A	N 10	N 100	10	N 50	10	N 200	20	N 100	-	N 5
2SB561A	N 10	N 100	150	N 50	< 10	N 200	50	N 100	-	N 5

Table 3. File SMMZ3.

Field Number	(2) AA-Bi	(0.1) AA-Cd	(1) AA-Sb	(5) AA-Zn
2SB374A	N 2	0.10	N 1	10
2SB400A	N 2	N 0.1	4	90
2SB417A	H 660	H 4.70	H 35	300
2SB509A	N 2	0.20	N 1	10
2SB510A	N 2	0.10	N 1	20
2SB511A	N 2	0.20	4	20
2SB511B	N 2	0.30	N 1	65
2SB514A	N 2	0.10	4	10
2SB515A	N 2	0.20	N 1	5
2SB516A	N 2	0.20	N 1	95
2SB517A	N 2	0.50	N 1	55
2SB518A	N 2	0.20	2	85
2SB520A	N 2	0.20	N 1	55
2SB520B	N 2	0.10	3	15
2SB521A1	N 2	0.30	N 1	95
2SB521A2	N 2	0.30	N 1	5
2SB522A	N 2	0.20	N 1	15
2SB524A	N 2	0.10	N 1	40
2SB527A	N 2	0.10	N 1	10
2SB528A	N 2	0.20	N 1	10
2SB530A	N 2	0.10	4	15
2SB533A	N 2	0.20	2	10
2SB535A	N 2	0.30	N 1	35
2SB535B	N 2	0.10	N 1	5
2SB536A	N 2	0.20	N 1	5
2SB544A	N 2	0.10	N 1	80
2SB545A	N 2	N 0.1	3	5
2SB548A	N 2	0.40	N 1	20
2SB550A	N 2	0.20	4	90
2SB550B	N 2	0.20	N 1	5
2SB550C	N 2	0.30	N 1	75
2SB551A	N 2	0.40	N 1	20
2SB559A	N 2	0.40	N 1	20
2SB561A	N 2	0.40	N 1	100

Table 3. File SMMZ3.

Field Number	Lab Number	Latitude ddmmss...h	Longitude ddmmss...h	Latitude	Longitude	(0.05) S-Fe%	(0.02) S-Mg%	(0.05) S-Ca%
2SB561B	LHL086	451439000N	114305000W	45.244167	114.51389	5.00	0.70	0.10

Table 3. File SMMZ3.

Field Number	(0.002) S-Ti ₈	(10) S-Mn	(0.5) S-Ag	(200) S-As	(10) S-Au	(20) S-B	(1) S-Ba	(10) S-Bi	(20) S-Bi	
2SB561B	0.50	150	N 0.5	N 200	N 10	70	700	1.5	N 10	N 20

Table 3. File SMMZ3.

Field Number	(5) S-Co	(10) S-Cr	(5) S-Cu	(20) S-La	(5) S-Mo	(20) S-Nb	(5) S-Ni	(10) S-Pb	(100) S-Sb	(5) S-Sc
2SB561B	10	10	20	50	N 5	< 20	7	N 10	N 100	7

Table 3. File SMMZ3.

Field Number	(10) S-Sn	(10) S-V	(50) S-W	(10) S-Y	(200) S-Zn	(10) S-Zr	(100) S-Th	(0.05) AA-Au	(5) AA-As
2SB561B	< 10	N 100	50	N 50	20	N 200	200	N 100	-

Table 3. File SMMZ3.

Field Number	(2) AA-Bi	(0.1) AA-Cd	(1) AA-Sb	(5) AA-Zn
2SB561B	N 2	0.20	N 1	25

Table 4. File SMMZ4.

Field Number	Lab Number	Latitude ddmmss...h	Longitude ddmmss...h	Latitude	Longitude	(0.05) S-Fe ⁸	(0.02) S-Mg ⁸	(0.05) S-Ca ⁸
1SB004A	LGB573	451843000N	1142356000W	45.311943	114.39889	10.00	3.00	5.00
1SB300A	LGB533	451403000N	1143117000W	45.234165	114.52139	3.00	0.70	0.30
1SB302A	LGB538	451406000N	1143137000W	45.235001	114.52695	0.20	1.00	0.15
1SB304A	LGB541	451456000N	1143213000W	45.24889	114.53694	3.00	1.50	2.00
1SB311A	LGB536	451706000N	1143124000W	45.285	114.52334	2.00	0.70	0.50
1SB312A	LGB549	451632000N	1143251000W	45.275555	114.5475	2.00	1.00	0.30
1SB314A	LGB534	451739000N	1143240000W	45.294167	114.54444	2.00	1.00	0.20
1SB315A	LGB546	451803000N	1143235000W	45.300831	114.54305	2.00	0.50	1.00
1SB315A1	LGB530	451803000N	1143235000W	45.300831	114.54305	2.00	0.70	0.70
1SB315A2	LGB528	451803000N	1143235000W	45.300831	114.54305	3.00	0.50	1.00
1SB316A	LGB548	451805000N	1143236000W	45.301388	114.54333	2.00	0.50	0.50
1SB317A	LGB547	451804000N	1143228000W	45.301109	114.54111	1.00	0.15	0.50
1SB318A	LGB545	451539000N	1142934000W	45.260834	114.49277	3.00	0.50	0.50
1SB320A	LGB529	451648000N	1142933000W	45.279999	114.49249	1.00	0.10	0.10
1SB322A	LGB532	451708000N	1142941000W	45.285557	114.49472	3.00	0.70	1.00
1SB323A	LGB537	451731000N	1142945000W	45.291943	114.49583	0.30	0.15	0.15
1SB326A	LGB539	451725000N	1142753000W	45.290276	114.46472	0.70	0.05	< 0.05
1SB328A	LGB542	451820000N	1142615000W	45.305553	114.4375	1.00	0.20	0.05
1SB328A	LGB544	451820000N	1142615000W	45.305553	114.4375	15.00	0.10	0.70
1SB330A	LGB543	451838000N	1142557000W	45.310555	114.4325	2.00	0.30	< 0.05
1SB332A	LGB550	451823000N	1142721000W	45.306389	114.45583	0.50	0.05	< 0.05
1SB333A	LGB531	451826000N	1142726000W	45.30722	114.45722	1.00	0.20	0.10
1SB334A	LGB535	451855000N	1142753000W	45.315277	114.46472	2.00	0.30	0.05
1SB336A	LGB540	451418000N	1143019000W	45.238335	114.50528	7.00	1.00	0.10
1SB338A	LGB568	451507000N	1142828000W	45.251945	114.47444	5.00	1.00	0.20
1SB341A	LGB558	451610000N	1142816000W	45.269444	114.47112	1.50	< 0.02	0.30
1SB345A	LGB554	451634000N	1142450000W	45.276112	114.41389	2.00	0.30	0.50
1SB347A	LGB553	451732000N	1142342000W	45.292221	114.395	5.00	0.10	0.20
1SB347A	LGB562	451731000N	1142342000W	45.291943	114.395	20.00	0.15	0.50
1SB349A	LGB560	451729000N	1142238000W	45.291389	114.37723	2.00	0.50	0.30
1SB351A	LGB563	451521000N	1152501000W	45.255833	115.41694	0.70	0.03	0.05
1SB351A1	LGB572	451521000N	1152501000W	45.255833	115.41694	0.70	0.03	0.05
1SB351A2	LGB565	451521000N	1142501000W	45.255833	114.41694	0.70	0.03	0.05
1SB352A	LGB557	451521000N	1142458000W	45.255833	114.41611	0.70	0.05	< 0.05
1SB353A	LGB555	451230000N	1142329000W	45.208336	114.39139	1.00	0.20	0.50

Table 4. File SMMZ4.

Field Number	(0.002) S-Ti ₈	(10) S-Mn	(0.5) S-Ag	(200) S-As	(10) S-Au	(10) S-B	(20) S-Ba	(1) S-Be	(10) S-Bi	(20) S-Cd
1SB004A	1.00	1000	< 0.5	N 200	N 10	10	700	< 1	N 10	N 20
1SB300A	0.30	200	N 0.5	N 200	N 10	30	500	2	N 10	N 20
1SB302A	0.50	200	N 0.5	N 200	N 10	15	700	1	N 10	N 20
1SB304A	0.50	500	N 0.5	N 200	N 10	20	1000	< 1	N 10	N 20
1SB311A	0.30	300	N 0.5	N 200	N 10	15	1000	1	N 10	N 20
1SB312A	0.20	500	N 0.5	N 200	N 10	15	700	1.5	N 10	N 20
1SB314A	0.30	300	N 0.5	N 200	N 10	15	700	1.5	N 10	N 20
1SB315A	0.30	500	N 0.5	N 200	N 10	30	1000	1	N 10	N 20
1SB315A1	0.30	300	N 0.5	N 200	N 10	15	700	1.5	N 10	N 20
1SB315A2	0.50	500	N 0.5	N 200	N 10	15	1000	1.5	N 10	N 20
1SB316A	0.30	500	N 0.5	N 200	N 10	15	700	1.5	N 10	N 20
1SB317A	0.20	200	N 0.5	N 200	N 10	10	1000	1	N 10	N 20
1SB318A	0.30	300	N 0.5	N 200	N 10	10	500	1.5	N 10	N 20
1SB320A	0.15	200	< 0.5	N 200	N 10	10	700	1.5	N 10	N 20
1SB322A	0.50	300	N 0.5	N 200	N 10	50	1000	1	N 10	N 20
1SB323A	0.20	70	N 0.5	N 200	N 10	15	1000	1	N 10	N 20
1SB326A	0.02	200	2	N 200	N 10	20	300	1	N 10	N 20
1SB328A	0.20	150	N 0.5	N 200	N 10	20	100	3	< 10	N 20
1SB328A	0.02	700	50	500	N 10	10	2000	< 1	N 10	N 20
1SB330A	0.30	100	N 0.5	N 200	N 10	10	1000	1	1000	N 20
1SB332A	0.15	70	< 0.5	N 200	N 10	30	700	1	N 10	N 20
1SB333A	0.20	100	N 0.5	N 200	N 10	10	3000	N 1	N 10	N 20
1SB334A	0.15	100	0.5	N 200	N 10	10	700	1	N 10	N 20
1SB336A	0.30	300	N 0.5	N 200	N 10	20	1000	< 1	N 10	N 20
1SB338A	0.50	200	N 0.5	N 200	N 10	30	500	1	N 10	N 20
1SB341A	0.15	700	N 0.5	N 200	N 10	20	700	1	N 10	N 20
1SB345A	0.30	500	N 0.5	N 200	N 10	10	< 20	1	N 10	N 20
1SB347A	0.20	700	N 0.5	N 200	N 10	20	1000	1.5	N 10	N 20
1SB347A	0.03	700	50	500	N 10	10	300	1.5	N 10	N 20
1SB349A	0.30	300	N 0.5	N 200	N 10	10	1000	1	1000	N 20
1SB351A	0.03	300	N 0.5	N 200	N 10	10	700	1	N 10	N 20
1SB351A1	0.03	200	N 0.5	N 200	N 10	15	70	5	N 10	N 20
1SB351A2	0.03	300	N 0.5	N 200	N 10	20	70	3	N 10	N 20
1SB352A	0.03	300	N 0.5	N 200	N 10	10	70	5	N 10	N 20
1SB353A	0.30	200	N 0.5	N 200	N 10	10	100	< 10	N 10	N 20
							500	2	N 10	N 20

Table 4. File SMMZ4.

Field Number	(5) s-Co	(10) s-Cr	(5) s-Cu	(20) s-La	(5) s-Mo	(20) s-Nb	(5) s-Ni	(10) s-Pb	(100) s-Sb	(5) s-Sc
1SB004A	30	50	30	50	N 5	< 20	50	10	N 100	10
1SB300A	15	30	70	70	N 5	< 20	20	15	N 100	10
1SB302A	15	50	N 5	70	N 5	N 20	20	30	N 100	10
1SB304A	20	70	< 5	100	N 5	N 20	7	50	N 100	20
1SB311A	15	20	10	70	N 5	N 20	7	30	N 100	15
1SB312A	15	30	70	70	N 5	N 20	15	20	N 100	10
1SB314A	10	30	20	100	N 5	< 20	20	10	N 100	15
1SB315A	10	30	30	100	N 5	< 20	10	30	N 100	15
1SB315A1	10	50	30	70	N 5	< 20	15	70	N 100	15
1SB315A2	15	50	30	100	N 5	< 20	15	30	N 100	20
1SB316A	10	20	15	100	N 5	< 20	10	50	N 100	15
1SB317A	< 5	< 10	< 5	100	N 5	N 20	< 5	50	N 100	7
1SB318A	10	20	15	70	N 5	< 20	7	30	N 100	15
1SB320A	5	30	5	150	N 5	N 20	10	20	N 100	7
1SB322A	10	30	7	100	N 5	N 20	15	50	N 100	20
1SB323A	N 5	20	N 5	N 20	N 5	N 20	< 5	< 10	N 100	10
1SB326A	N 5	< 10	< 5	N 20	N 5	30	N 5	150	N 100	5
1SB328A	5	20	5	70	N 5	N 20	5	20	N 100	7
1SB328A	10	< 10	1500	N 20	15	N 20	30	700	150	5
1SB330A	10	30	N 5	70	N 5	N 20	10	< 10	N 100	10
1SB332A	N 5	30	N 5	50	N 5	N 20	5	10	N 100	5
1SB333A	N 5	20	< 5	30	N 5	N 20	N 5	< 10	N 100	7
1SB334A	7	20	N 5	50	N 5	N 20	10	< 10	N 100	7
1SB336A	70	20	20	N 20	N 5	N 20	5	N 10	N 100	10
1SB338A	15	70	N 5	100	N 5	N 20	20	20	N 100	15
1SB341A	N 5	N 10	< 5	700	N 5	30	< 5	20	N 100	< 5
1SB345A	10	20	7	150	N 5	< 20	10	50	N 100	15
1SB347A	< 5	N 10	30	200	N 5	20	N 5	50	N 100	7
1SB347A	10	10	1500	N 20	15	N 20	50	700	150	< 5
1SB349A	7	15	< 5	50	N 5	< 20	< 5	30	N 100	10
1SB351A	N 5	N 10	< 5	30	N 5	30	5	70	N 100	5
1SB351A1	N 5	< 10	< 5	20	N 5	30	N 5	100	N 100	5
1SB351A2	N 5	N 10	< 5	< 20	N 5	30	< 5	100	N 100	7
1SB352A	N 5	N 10	5	50	N 5	50	< 5	150	N 100	5
1SB353A	5	10	5	70	N 5	< 20	7	50	N 100	10

Table 4. File SMMZ4.

Field Number	(10) S-Sn	(100) S-Sr	(10) S-V	(50) S-W	(10) S-Y	(200) S-Zn	(10) S-Zr	(100) S-Th
1SB004A	N 10	150	100	N 50	30	< 200	30	N 100
1SB300A	15	200	100	N 50	50	N 200	200	N 100
1SB302A	< 10	200	70	N 50	30	N 200	200	N 100
1SB304A	< 10	300	100	N 50	30	N 200	200	N 100
1SB311A	< 10	150	70	N 50	70	N 200	100	N 100
1SB312A	< 10	150	70	N 50	30	N 200	100	N 100
1SB314A	10	100	70	N 50	50	N 200	100	N 100
1SB315A	10	200	70	N 50	100	N 200	100	N 100
1SB315A1	10	200	70	N 50	30	N 200	100	N 100
1SB315A2	< 10	200	70	N 50	100	N 200	100	N 100
1SB316A	10	200	70	N 50	50	N 200	150	N 100
1SB317A	15	< 100	20	N 50	100	N 200	100	N 100
1SB318A	N 10	150	70	N 50	50	N 200	100	N 100
1SB320A	N 10	200	50	N 50	70	N 200	300	N 100
1SB322A	10	150	100	N 50	70	N 200	100	N 100
1SB323A	N 10	150	50	N 50	15	N 200	200	N 100
1SB326A	50	N 100	10	N 50	70	N 200	150	N 100
1SB328A	N 10	150	30	N 50	15	N 200	100	N 100
1SB328A	50	200	100	100	50	700	20	N 100
1SB330A	N 10	< 100	50	N 50	50	N 200	200	N 100
1SB332A	N 10	200	50	N 50	10	N 200	150	N 100
1SB333A	N 10	150	50	N 50	20	N 200	700	N 100
1SB334A	< 10	< 100	50	N 50	20	N 200	300	N 100
1SB336A	< 10	N 100	50	N 50	70	N 200	200	N 100
1SB338A	N 10	150	70	N 50	70	N 200	500	N 100
1SB341A	N 10	N 100	< 10	N 50	70	N 200	100	< 100
1SB345A	N 10	150	70	N 50	70	N 200	150	N 100
1SB347A	< 10	< 100	20	N 50	70	N 200	500	N 100
1SB347A	50	500	70	100	70	1000	20	N 100
1SB349A	N 10	100	50	N 50	70	N 200	100	N 100
1SB351A	30	N 100	< 10	N 50	100	N 200	70	< 100
1SB351A1	30	N 100	< 10	N 50	100	N 200	70	< 100
1SB351A2	30	N 100	< 10	N 50	100	N 200	70	< 100
1SB352A	50	N 100	10	N 50	100	N 200	100	N 100
1SB353A	< 10	100	50	N 50	70	N 200	50	N 100

Table 4. File SMMZ4.

Field Number	Lab Number	Latitude ddmmss...h	Longitude ddmmss...h	Latitude	Longitude	(0.05) S-Pe%	(0.02) S-Mg%	(0.05) S-Ca%
1SB503A	LGB552	451624000N	1153311000W	45.273335	115.55305	1.50	1.00	0.30
1SB503A	LGB567	451624000N	1143311000W	45.273335	114.55305	10.00	3.00	0.05
1SB505A	LGB551	451404000N	1143113000W	45.234444	114.52028	1.50	1.00	0.07
1SB506A	LGB566	451405000N	1143114000W	45.234722	114.52056	2.00	0.20	< 0.05
1SB508A	LGB564	451449000N	1143038000W	45.246944	114.51056	5.00	1.50	0.30
1SB509A	LGB571	451511000N	1143007000W	45.253056	114.50195	2.00	0.50	0.70
1SB512A	LGB559	451402000N	1142217000W	45.233891	114.37139	1.00	0.30	0.50
1SB513A	LGB569	451559000N	1142143000W	45.266388	114.36195	0.50	0.10	0.70
1SB515A	LGB556	451357000N	1142904000W	45.232502	114.48444	5.00	0.70	0.10

Table 4. File SMMZ4.

Field Number	(0.002) S-Ti%	(10) S-Mn	(0.5) S-Ag	(200) S-As	(10) S-Au	(10) S-B	(20) S-Ba	(1) S-Be	(10) S-Bi	(20) S-Cd
1SB503A	0.20	700	N 0.5	N 200	N 10	50	700	1.5	N 10	N 20
1SB503A	0.30	1000	N 0.5	N 200	N 10	1500	300	< 1	10	N 20
1SB505A	0.15	300	N 0.5	N 200	N 10	50	1000	2	N 10	N 20
1SB506A	0.20	150	N 0.5	N 200	N 10	30	300	1	N 10	N 20
1SB508A	0.50	300	N 0.5	N 200	N 10	10	1000	< 1	N 10	N 20
1SB509A	0.30	500	N 0.5	N 200	N 10	20	700	1.5	N 10	N 20
1SB512A	0.20	200	N 0.5	N 200	N 10	30	1000	1.5	N 10	N 20
1SB513A	0.05	100	N 0.5	N 200	N 10	20	1500	1	N 10	N 20
1SB515A	0.30	500	N 0.5	N 200	N 10	50	700	1	N 10	N 20

Table 4. File SMMZ4.

	(5) S-Co	(10) S-Cr	(5) S-Cu	(20) S-La	(5) S-Mo	(20) S-Nb	(5) S-Ni	(10) S-Pb	(100) S-Sb	(5) S-Sc
Field Number										
1SB503A	10	20	10	50	N 5	< 20	10	30	N 100	10
1SB503A	15	50	50	70	N 5	< 20	30	15	N 100	10
1SB505A	10	20	< 5	70	N 5	< 20	10	30	N 100	7
1SB506A	15	30	50	30	N 5	N 20	10	< 10	N 100	7
1SB508A	15	200	30	50	N 5	< 20	70	10	N 100	20
1SB509A	10	20	20	70	N 5	N 20	7	50	N 100	10
1SB512A	5	20	5	50	N 5	N 20	5	30	N 100	10
1SB513A	N 5	10	< 5	N 20	N 5	N 20	5	50	N 100	5
1SB515A	10	30	< 5	N 20	N 5	< 20	15	< 10	N 100	15

Table 4. File SMMZ4.

Field Number	(10) S-Sn	(100) S-Sr	(10) S-V	(50) S-W	(10) S-Y	(200) S-Zn	(100) S-Zr	(100) S-Th
1SB503A	15	150	50	N 50	30	N 200	150	N 100
1SB503A	< 10	< 100	70	N 50	300	200	200	N 100
1SB505A	10	150	50	N 50	30	N 200	100	N 100
1SB506A	< 10	N 100	50	N 50	20	N 200	100	N 100
1SB508A	15	100	100	N 50	50	N 200	200	N 100
1SB509A	10	< 100	70	N 50	50	N 200	300	N 100
1SB512A	< 10	100	50	N 50	50	N 200	100	N 100
1SB513A	N 10	300	10	N 50	70	N 200	50	N 100
1SB515A	15	< 100	100	N 50	10	N 200	20	N 100
					20	N 200	100	N 100

Table 5. File SMM25.

Field Number	Lab Number	Latitude ddmmss...h	Longitude ddmmss...h	Latitude	Longitude	(0.05) S-Fe ₈	(0.02) S-Mg ₈	(0.05) S-Ca ₈
1SB001SF	LGB584	451705000N	1142715000W	45.284721	114.45416	7	1.50	2.00
1SB002SF	LGB576	451710000N	1142716000W	45.28611	114.45444	2	0.70	0.50
1SB005SF	LGB596	451810000N	1143219000W	45.302776	114.53861	2	0.50	0.70
1SB006SF	LGB590	451516000N	1142857000W	45.254444	114.4825	2	0.50	0.50
1SB007SF	LGB574	451513000N	1142900000W	45.253613	114.48333	2	0.50	0.20
1SB008SF	LGB575	451515000N	1142903000W	45.254166	114.48416	2	0.70	0.30
1SB009SF	LGB597	451531000N	1143112000W	45.25861	114.52	3	0.70	0.50
1SB009TF	LGB582	451531000N	1143112000W	45.25861	114.52	2	1.00	0.70
1SB009TF	LGB585	451531000N	1143112000W	45.25861	114.52	5	1.00	0.50
1SB010SF	LGB589	451530000N	1143111000W	45.258335	114.51972	3	0.70	0.70
1SB011SF	LGB587	451534000N	1143118000W	45.259445	114.52167	2	0.50	0.30
1SB012SF	LGB595	451757000N	1143345000W	45.299168	114.5625	2	0.70	0.70
1SB013SF	LGB577	451240000N	1142904000W	45.211113	114.48444	3	1.00	1.00
1SB014SF	LGB593	451236000N	1142911000W	45.209999	114.48638	2	0.70	0.70
1SB015SF	LGB598	451251000N	1142810000W	45.214169	114.46944	2	0.30	0.50
1SB016SF	LGB594	451256000N	1142811000W	45.215557	114.46972	1.5	0.50	0.50
1SB017SF	LGB586	451533000N	1142529000W	45.259167	114.42472	5	1.00	1.00
1SB018SF	LGB580	451531000N	1142531000W	45.25861	114.42528	2	0.70	1.50
1SB019SF	LGB588	451435000N	1142709000W	45.243057	114.4525	2	0.50	0.30
1SB020SF	LGB583	451443000N	1142659000W	45.245277	114.44972	2	1.00	1.00
1SB021SF	LGB579	451405000N	1142536000W	45.234722	114.42667	2	0.50	0.30
1SB022SF	LGB591	451350000N	1142609000W	45.230556	114.43584	1.5	0.50	0.50
1SB023SF	LGB578	451522000N	1142342000W	45.256111	114.395	2	0.70	1.00
1SB024SF	LGB592	451523000N	1142340000W	45.25639	114.39444	2	0.50	1.00
1SB025SF	LGB581	451813000N	1142339000W	45.303612	114.39417	3	0.70	1.00

Table 5. File SMMZ5.

Field Number	(0.002) S-Ti*	(-10) S-Mn	(0.5) S-Ag	(200) S-Au	(10) S-Ba	(20) S-Ba	(1) S-Be	(10) S-Bi	(20) S-Cd
1SB001SF	1.00	2000	N 0.5	N 200	N 10	10	700	< 1	N 20
1SB002SF	0.50	500	N 0.5	N 200	N 10	50	1000	1	N 20
1SB005SF	0.50	300	N 0.5	N 200	N 10	50	500	1	N 20
1SB006SF	0.20	300	N 0.5	N 200	N 10	50	150	1	N 20
1SB007SF	0.30	200	< 0.5	N 200	N 10	50	1000	1	N 20
1SB008SF	0.30	300	N 0.5	N 200	N 10	100	1000	1	N 20
1SB009SF	0.50	500	N 0.5	N 200	N 10	100	1000	1	N 20
1SB009TF	0.50	1000	N 0.5	N 200	N 10	70	700	1	N 20
1SB009TF	0.50	1000	N 0.5	N 200	N 10	30	1000	1	N 20
1SB010SF	0.50	500	N 0.5	N 200	N 10	30	700	1	N 20
1SB011SF	0.30	200	< 0.5	N 200	N 10	30	1000	1	N 20
1SB012SF	0.30	300	N 0.5	N 200	N 10	70	700	1	N 20
1SB013SF	1.00	700	0.5	N 200	N 10	20	1000	1	N 20
1SB014SF	0.30	300	< 0.5	N 200	N 10	15	500	1.5	N 20
1SB015SF	0.50	300	N 0.5	N 200	N 10	30	700	2	N 20
1SB016SF	0.30	200	N 0.5	N 200	N 10	15	300	2	N 20
1SB017SF	0.70	1000	N 0.5	N 200	N 10	50	700	1	N 20
1SB018SF	0.70	1000	N 0.5	N 200	N 10	15	500	1	N 20
1SB019SF	0.30	200	N 0.5	N 200	N 10	10	700	1	N 20
1SB020SF	0.50	500	N 0.5	N 200	N 10	100	1000	1	N 20
1SB021SF	0.50	300	N 0.5	N 200	N 10	20	1000	1	N 20
1SB022SF	0.50	300	N 0.5	N 200	N 10	100	1000	1	N 20
1SB023SF	1.00	500	N 0.5	N 200	N 10	70	700	1	N 20
1SB024SF	0.50	700	N 0.5	N 200	N 10	70	500	1.5	N 20
1SB025SF	0.70	700	N 0.5	N 200	N 10	20	300	1.5	N 20
						15	700	1	N 20

Table 5. File TSMMZ5.

Field Number	(5) S-Co	(10) S-Cr	(5) S-Cu	(20) S-La	(5) S-Mo	(20) S-Nb	(5) S-Ni	(10) S-Pb	(100) S-Sb	(5) S-Sc
1SB001SF	15	20	30	150	N 5	20	7	20	N 100	15
1SB002SF	20	50	20	150	N 5	20	20	30	N 100	7
1SB005SF	15	70	30	100	N 5	< 20	20	30	N 100	10
1SB006SF	50	20	30	100	N 5	< 20	10	20	N 100	10
1SB007SF	30	50	30	70	N 5	< 20	20	15	N 100	10
1SB008SF	50	50	30	100	N 5	N 20	20	30	N 100	10
1SB009SF	10	50	20	70	N 5	< 20	20	30	N 100	10
1SB009TF	15	70	20	100	N 5	< 20	15	50	N 100	15
1SB009TF	15	70	20	100	N 5	< 20	20	30	N 100	15
1SB010SF	15	70	20	70	N 5	< 20	20	30	N 100	15
1SB011SF	10	50	10	50	N 5	N 20	15	50	N 100	10
1SB012SF	15	70	20	100	N 5	< 20	30	30	N 100	10
1SB013SF	15	70	20	150	< 5	30	30	100	N 100	15
1SB014SF	10	50	15	70	N 5	< 20	20	50	N 100	10
1SB015SF	7	30	< 5	150	< 5	20	5	50	N 100	7
1SB016SF	10	50	7	50	N 5	N 20	15	20	N 100	7
1SB017SF	15	20	15	100	N 5	20	15	20	N 100	15
1SB018SF	10	30	7	150	N 5	30	10	30	N 100	10
1SB019SF	20	50	20	100	N 5	< 20	10	30	N 100	10
1SB020SF	10	50	< 5	100	N 5	20	15	30	N 100	10
1SB021SF	20	30	15	100	N 5	< 20	10	20	N 100	10
1SB022SF	10	50	7	70	N 5	< 20	10	20	N 100	10
1SB023SF	10	100	10	150	N 5	20	15	30	N 100	15
1SB024SF	10	20	20	200	N 5	20	10	50	N 100	7
1SB025SF	10	50	7	100	N 5	< 20	10	30	N 100	10

Table 5. File SMMZ5.

Field Number	(10) S-Sn	(100) S-Sr	(10) S-V	(50) S-W	(10) S-Y	(200) S-Zn	(10) S-Zr	(100) S-Th
1SB001SF	N 10	200	70	N 50	100	N 200	500	N 100
1SB002SF	< 10	150	70	N 50	70	N 200	700	N 100
1SB005SF	< 10	200	50	N 50	50	N 200	150	N 100
1SB006SF	N 10	150	50	N 50	30	N 200	300	N 100
1SB007SF	< 10	100	50	N 50	50	N 200	200	N 100
1SB008SF	N 10	150	50	N 50	70	N 200	200	< 100
1SB009SF	< 10	150	70	N 50	70	N 200	500	N 100
1SB009TF	10	150	70	N 50	70	N 200	300	N 100
1SB009TP	< 10	100	50	N 50	50	N 200	500	N 100
1SB010SF	10	150	70	N 50	70	N 200	500	N 100
1SB011SF	< 10	200	70	N 50	50	N 200	100	N 100
1SB012SF	< 10	200	50	N 50	50	N 200	100	N 100
1SB013SF	15	200	70	N 50	70	N 200	500	N 100
1SB014SF	< 10	200	50	N 50	30	N 200	100	N 100
1SB015SF	20	150	50	N 50	50	N 200	500	100
1SB016SF	N 10	200	50	N 50	50	N 200	100	N 100
1SB017SF	N 10	150	50	N 50	70	N 200	700	N 100
1SB018SF	N 10	100	50	N 50	100	N 200	1000	N 100
1SB019SF	N 10	200	50	N 50	30	N 200	300	N 100
1SB020SF	N 10	150	50	N 50	70	N 200	500	N 100
1SB021SF	N 10	150	50	N 50	50	N 200	500	N 100
1SB022SF	< 10	200	50	N 50	50	N 200	300	N 100
1SB023SF	< 10	150	50	N 50	300	N 200	1000	N 100
1SB024SF	< 10	200	50	N 50	100	N 200	> 1000	N 100
1SB025SF	< 10	150	70	N 50	70	N 200	1000	N 100